

1 IN THE UNITED STATES DISTRICT COURT  
2 FOR THE EASTERN DISTRICT OF TEXAS  
3 MARSHALL DIVISION  
4  
5 OPTIS WIRELESS TECHNOLOGY, ) ( CIVIL ACTION NO.  
6 LLC, OPTIS CELLULAR ) ( 2:19-CV-66-JRG  
7 TECHNOLOGY, LLC, PANOPTIS ) ( )  
8 PATENT MANAGEMENT, LLC, ) ( )  
9 UNWIRED PLANET, LLC, UNWIRED ) ( )  
PLANET INTERNATIONAL LIMITED, ) ( )  
PLAINTIFFS, ) ( )  
VS. ) ( )  
MARSHALL, TEXAS  
AUGUST 5, 2020  
1:12 P.M.  
APPLE INC.,  
DEFENDANTS.

11 | TRANSCRIPT OF JURY TRIAL

12 | AFTERNOON SESSION

13 BEFORE THE HONORABLE JUDGE RODNEY GILSTRAP

14 UNITED STATES CHIEF DISTRICT JUDGE

## APPEARANCES:

17 FOR THE PLAINTIFFS:

18 MR. SAMUEL F. BAXTER  
19 MS. JENNIFER TRUELOVE  
20 MCKOOL SMITH, P.C.  
21 104 E. Houston Street  
Suite 300  
22 Marshall, TX 75670

22 MR. JASON G. SHEASBY  
23 MS. ANNITA ZHONG  
IRELL & MANELLA LLP  
24 1800 Avenue of the Stars  
Suite 900  
25 Los Angeles, CA 90067

1 FOR THE PLAINTIFFS:

2  
3 MR. STEVEN J. POLLINGER  
MR. SETH R. HASENOUR  
MCKOOL SMITH, P.C.  
4 300 W. 6th Street  
Suite 1700  
5 Austin, TX 78701

6  
7 MR. JONATHAN YIM  
MCKOOL SMITH, P.C.  
One Manhattan West  
8 395 9th Avenue  
50th Floor  
9 New York, NY 10001

10  
11 MR. CHRISTOPHER P. MCNETT  
MCKOOL SMITH, P.C.  
12 1999 K Street, NW  
Suite 600  
Washington, DC 20006  
13

14 MS. INGRID PETERSEN  
MS. KELSEY SCHUETZ  
15 IRELL & MANELLA LLP  
840 Newport Center Drive  
16 Suite 400  
Newport Beach, CA 92660  
17

18 FOR THE DEFENDANT:

19  
20 MR. JOSEPH J. MUELLER  
WILMER CUTLER PICKERING  
HALE & DORR, LLP  
21 60 State Street  
Boston, MA 02109  
22

23 MR. MICHAEL J. SUMMERSGILL  
WILMER CUTLER PICKERING  
24 HALE & DORR, LLP  
60 State Street  
25 Boston, MA 02109

1 FOR THE DEFENDANT:

2  
3 MS. MELISSA R. SMITH  
GILLAM & SMITH, LLP  
303 South Washington Avenue  
4 Marshall, TX 75670

5

6

7

8 COURT REPORTER: Ms. Shelly Holmes, CSR, TCRR  
Official Court Reporter  
9 United States District Court  
Eastern District of Texas  
10 Marshall Division  
11 100 E. Houston  
Marshall, Texas 75670  
(903) 923-7464

12

13

14 (Proceedings recorded by mechanical stenography, transcript  
produced on a CAT system.)

15

16

17

18

19

20

21

22

23

24

25

## 1 P R O C E E D I N G S

01:12:35 2 (Jury out.)

01:12:35 3 COURT SECURITY OFFICER: All rise.

01:12:36 4 THE COURT: Be seated, please.

01:12:40 5 Plaintiff, are you prepared to call your next  
01:12:47 6 witness?

01:12:47 7 MR. SHEASBY: We are, Your Honor.

01:12:49 8 THE COURT: And who do you intend to call,

01:12:51 9 Mr. Sheasby?

01:12:51 10 MR. SHEASBY: Your Honor -- Your Honor, we intend  
01:12:54 11 to call Ms. Johanna Dwyer, presented by Ms. Ingrid  
01:12:58 12 Petersen.01:12:58 13 THE COURT: All right. With regard to Ms. Dwyer,  
01:13:03 14 the Court is aware that there is a motion on the docket by  
01:13:08 15 Defendant asking the Court to preclude her testimony.01:13:12 16 Have the parties resolved that, or do I need to  
01:13:15 17 rule on that motion?01:13:16 18 MR. MUELLER: Your Honor, we're going to take it  
01:13:17 19 up on cross-examination, so no need to rule, Your Honor.01:13:20 20 THE COURT: If you're going to take it up on  
01:13:22 21 cross-examination, then I'll deny the motion to preclude.

01:13:25 22 MR. MUELLER: Understood.

01:13:25 23 THE COURT: All right. I just don't want an  
01:13:28 24 unresolved issue on my docket.

01:13:30 25 All right. Is there anything else that needs to

01:13:32 1 be raised with the Court before I bring the jury back in?

01:13:35 2 MR. SHEASBY: Nothing from Plaintiffs, Your Honor.

01:13:36 3 MR. MUELLER: Just one thing, Your Honor, we

01:13:38 4 checked the transcript from the deposition of Ms. Mewes

01:13:41 5 that was played yesterday. The clips that were played were

01:13:44 6 indeed the clips that were agreed to that came out of the

01:13:47 7 process, but they were not played in chronological order;

01:13:51 8 they were shuffled somehow. We just ask that any

01:13:54 9 deposition clips that are played be played in transcript

01:13:57 10 order.

01:13:57 11 THE COURT: I sure -- I assume that was something

01:14:00 12 that was unintentional, and I assume everyone's intention

01:14:04 13 is to not shuffle but keep in the same order any deposition

01:14:10 14 designation testimony going forward. Anybody disagree with

01:14:10 15 that?

01:14:10 16 MR. SHEASBY: No, Your Honor, it was

01:14:11 17 unintentional.

01:14:13 18 THE COURT: I'm not sure what we can do about it

01:14:14 19 being shuffled now.

01:14:14 20 MR. SHEASBY: Well, I just want to note for the

01:14:16 21 record that they looked at the order before it was played.

01:14:18 22 It was given to them.

01:14:19 23 THE COURT: And -- and it doesn't really help me

01:14:21 24 to do this, you know, finger-pointing. It happened. It's

01:14:25 25 done. We can't fix it. But let's make sure we don't have

01:14:29 1 it happen again.

01:14:30 2 MR. SHEASBY: I understand, Your Honor.

01:14:32 3 THE COURT: All right. Let's bring in the jury,

01:14:34 4 please, Mr. Elliott.

01:14:36 5 COURT SECURITY OFFICER: All rise.

01:14:56 6 (Jury in.)

01:14:56 7 THE COURT: Welcome back from lunch, ladies and

01:15:01 8 gentlemen. Please have a seat.

01:15:03 9 Plaintiff, call your next witness.

01:15:09 10 MR. SHEASBY: Your Honor, Plaintiffs call

01:15:13 11 Ms. Johanna Dwyer.

01:15:13 12 THE COURT: All right. Ms. Dwyer, if you'll come

01:15:17 13 forward, please, and be sworn.

01:15:30 14 (Witness sworn.)

01:15:31 15 THE COURT: If you will, please come around and

01:15:42 16 have a seat at the witness stand.

01:15:44 17 All right. Counsel, if you'll introduce yourself

01:15:59 18 to the jury and then proceed with your direct examination.

01:16:02 19 MS. PETERSEN: Good afternoon, my name is Ingrid

01:16:05 20 Petersen on behalf of the Plaintiffs.

01:16:05 21 JOHANNA DWYER, PLAINTIFFS' WITNESS, SWORN

01:16:05 22 DIRECT EXAMINATION

01:16:08 23 BY MS. PETERSEN:

01:16:08 24 Q. Good afternoon. Could you please introduce yourself to

01:16:11 25 the jury?

01:16:12 1 A. Yes. Good afternoon. My name is Johanna Dwyer.

01:16:14 2 Q. Ms. Dwyer, could you tell us a little bit about  
01:16:18 3 yourself?

01:16:18 4 A. I'd be happy to. So I was born and raised in a little  
01:16:23 5 village called Hockley Village, which is in Canada. And my  
01:16:27 6 family, my brother and I, lived in a small cabin on a lake  
01:16:31 7 growing up where I learned to fish and to swim.

01:16:35 8 And my brother and I were very fortunate to be the  
01:16:38 9 first people in our family to ever going to a university,  
01:16:40 10 which is something that I'm both grateful for and very  
01:16:43 11 proud of.

01:16:44 12 And it was at university that I met my husband,  
01:16:47 13 Jerry, and we'll be married 24 years this month. We have  
01:16:54 14 three children, ages 17, 19, and 21. My oldest daughter is  
01:16:59 15 studying to be a nurse, and she'll finish next year. My  
01:16:59 16 son is studying engineering. And my youngest daughter will  
01:17:04 17 be a senior in high school next year.

01:17:05 18 Q. Ms. Dwyer, why are you here today?

01:17:07 19 A. I'm here to give my opinion from the perspective of a  
01:17:13 20 technical delegate, who has attended 3GPP meetings, as to  
01:17:17 21 whether the Plaintiffs' five patents are essential to the  
01:17:20 22 standard of LTE.

01:17:21 23 Q. What is your opinion?

01:17:25 24 A. It's my opinion from the standpoint of a technical  
01:17:28 25 delegate, that the Plaintiffs' five patents are truly

01:17:33 1 standard essential patents for LTE.

01:17:34 2 Q. How much are you being compensated for this case?

01:17:37 3 A. I'm being paid at my usual rate of \$600 per hour for my

01:17:45 4 work on this case.

01:17:46 5 Q. What does your work depend on?

01:17:49 6 A. My compensation depends solely on the hours that I put

01:17:53 7 in. And it's got no relation whatsoever to the outcome of

01:17:56 8 the case.

01:17:57 9 Q. What materials did you review for this case?

01:17:59 10 A. I've reviewed the Plaintiffs' five patents-in-suit and

01:18:02 11 the claim charts for those five patents, in addition to the

01:18:05 12 LTE standards, as well as patent analytics and deposition

01:18:15 13 testimony.

01:18:16 14 MS. PETERSEN: Could we please pull up Slide 2?

01:18:19 15 Q. (By Ms. Petersen) Could you please tell us, Ms. Dwyer,

01:18:21 16 a little bit about your education?

01:18:23 17 A. Yes, I can. In 1993, I was awarded a Bachelor of

01:18:27 18 Science degree in mathematics and engineering from Queen's

01:18:30 19 University, which is in Canada.

01:18:31 20 From 1996 to 2001, I took several graduate-level

01:18:38 21 courses in electrical engineering and completed several

01:18:41 22 projects on radio design. In 2013 I was awarded an MBA

01:18:47 23 from MIT.

01:18:48 24 MS. PETERSEN: Could we please go to Slide 3?

01:18:52 25 Q. (By Ms. Petersen) Ms. Dwyer, what experience do you

01:18:54 1 have in evaluating wireless technology?

01:18:57 2 A. I've been working in wireless technology my entire  
01:19:02 3 career. I spent the first 10 years of my career designing,  
01:19:07 4 developing, building, and testing radios for cell phones.

01:19:10 5 In the year 2000, I began working at Research In  
01:19:14 6 Motion, RIM, which is now BlackBerry, where I similarly  
01:19:19 7 built and developed and tested radios for the first five  
01:19:22 8 years. And in 2005, I was asked to join the standards team  
01:19:28 9 and to begin innovating and designing technologies for  
01:19:32 10 contribution to 3GPP for developing wireless standards.

01:19:38 11 Q. And could you please discuss further what you did in  
01:19:42 12 RIM's wireless standards team?

01:19:44 13 A. When I was in the wireless standards team, which I  
01:19:47 14 began in 2005, in addition to attending meetings and I  
01:19:52 15 managed a team also that attended those meetings during  
01:19:56 16 that time, I ultimately was the -- the leader of the global  
01:20:02 17 radio standards team.

01:20:03 18 And in that period of time, I analyzed a number of  
01:20:07 19 patents and created claim charts for patents and was  
01:20:11 20 charged with determining true essentiality of patents to  
01:20:15 21 standards, including the LTE standard.

01:20:18 22 Q. What is your current employment?

01:20:20 23 A. In 2016, I started an IP consultancy firm called  
01:20:30 24 QipWorks, and that's where I'm working here.

01:20:34 25 Q. Are you a named inventor on any patents?

01:20:36 1 A. I'm an inventor on 220 granted patents.

01:20:39 2 Q. And do any of those patents cover contributions to

01:20:42 3 3GPP?

01:20:42 4 A. I would say about 90 percent of those relate to

01:20:48 5 technologies that were innovated and contributed by myself

01:20:52 6 to 3GPP or by other people in my team.

01:20:55 7 Q. You mentioned a moment ago the term standards essential

01:21:02 8 patent. What is that?

01:21:04 9 A. A standards essential patent is a patent that covers

01:21:08 10 technology that was adopted into the standards.

01:21:10 11 So, for example, a standards essential LTE patent

01:21:16 12 is a patent that covers LTE technology that was adopted

01:21:19 13 into the standard that's used in LTE networks.

01:21:22 14 Q. You also mentioned the term 3GPP and that you

01:21:26 15 participated in 3GPP meetings. What is 3GPP?

01:21:29 16 A. 3GPP is an engineering group. It's a group that

01:21:36 17 develops and chooses the technology that gets included into

01:21:40 18 standards, for example, like the LTE standard.

01:21:44 19 Q. Who are 3GPP members?

01:21:48 20 A. 3GPP members are typically technology companies. And,

01:21:54 21 for example, Samsung, LG, and Panasonic are all members of

01:21:58 22 3GPP.

01:21:59 23 Q. And for LTE, who chose the technology to include into

01:22:04 24 the LTE standard?

01:22:06 25 A. The development of LTE was a 3GPP project, and so all

01:22:10 1 of the technology that was chosen for the LTE standard was  
01:22:15 2 done in 3GPP.

01:22:16 3 Q. You mentioned your involvement in 3GPP meetings. What  
01:22:22 4 involvement did you have in meetings regarding LTE?

01:22:27 5 A. LTE development in 3GPP began in 2005 until the end of  
01:22:35 6 2008. And I joined the standards team at RIM in 2005, and  
01:22:41 7 I attended meetings during the time from 2005 through 2008  
01:22:46 8 when LTE was being developed, and I additionally managed  
01:22:49 9 several people who were attending meetings at that time.

01:22:53 10 Q. How long have you been involved in the wireless  
01:22:56 11 communication industry?

01:22:58 12 A. My entire career has been in wireless communication, so  
01:23:07 13 that's over 25 years now.

01:23:10 14 Q. What has been the primary focus of your career?

01:23:12 15 A. The primary focus of my career has been patents, and  
01:23:19 16 standards essential patents specifically, and developing  
01:23:21 17 and analyzing claim charts for standards essential patents.

01:23:28 18 MS. PETERSEN: Can we please pull up Slide 4?

01:23:32 19 Q. (By Ms. Petersen) You mentioned that you analyzed  
01:23:35 20 claim charts at RIM. What are claim charts?

01:23:38 21 A. So a claim chart is the proof that a patent is truly  
01:23:43 22 essential to a standard. So as you can see on the slide  
01:23:46 23 before you, this is the claim chart for the '284 patent  
01:23:49 24 that we heard about earlier.

01:23:50 25 And as you can see on the left-hand side of the

01:23:52 1 claim chart, is where the claim from the patent is put, and  
01:23:55 2 it's broken out element-by-element.

01:23:58 3 And then on the other side, on the right side of  
01:24:00 4 the claim chart is the standards language that captures the  
01:24:05 5 technology of the patent in -- specifically from that  
01:24:09 6 claim.

01:24:09 7 So a claim chart goes claim-by-claim and  
01:24:13 8 element-by-element in the claim, and it illustrates where  
01:24:17 9 in the standards that technology is captured.

01:24:18 10 Q. When you were at RIM, who typically created claim  
01:24:22 11 charts for you to analyze?

01:24:27 12 A. Claim charts are typically created -- or the creation  
01:24:30 13 of the claim charts is overseen by the patent owners.

01:24:33 14 Q. And why did you analyze claim charts created by the  
01:24:37 15 patent owners instead of creating them yourself?

01:24:41 16 A. It's very difficult to see flaws in your own work. So  
01:24:46 17 when I create a claim chart, I spend time making it as  
01:24:51 18 thorough and complete as I can possibly make it. And by  
01:24:54 19 the time I hand it over, it's the best work I can do.

01:24:57 20 And I don't see any flaws in it at that point  
01:25:00 21 because everybody thinks their own baby is beautiful. So  
01:25:06 22 you need somebody else to have a look.

01:25:08 23 Q. What did you do with the claim charts that you received  
01:25:11 24 when you were at RIM?

01:25:11 25 A. When I received claim charts at RIM, RIM would give me

01:25:16 1 the claim charts, and they'd say, could you try to break  
01:25:20 2 these, please?

01:25:21 3 And that's what I would do. I would try to find  
01:25:25 4 problems in the charts or inconsistencies or gaps or things  
01:25:28 5 that weren't explained to my satisfaction. And if I could  
01:25:31 6 find those and I could break the chart, then that would say  
01:25:35 7 that that patent wasn't truly standards essential.

01:25:39 8 MS. PETERSEN: Your Honor, Plaintiffs offer  
01:25:42 9 Ms. Johanna Dwyer as an expert on determining whether  
01:25:45 10 patents are essential to the LTE standard.

01:25:46 11 THE COURT: Is there objection?

01:25:48 12 MS. SMITH: No, Your Honor.

01:25:50 13 THE COURT: Then, without objection, the Court  
01:25:52 14 will recognize this witness as an expert in the designated  
01:25:54 15 field.

01:25:54 16 Please continue, Ms. Petersen.

01:26:00 17 Q. (By Ms. Petersen) Turning to the patents in this case,  
01:26:01 18 have you had a chance to review the five patents?

01:26:05 19 A. Yes, I've reviewed the five patents in this case.

01:26:08 20 Q. What did you know about the patents prior to becoming  
01:26:11 21 an expert in this case?

01:26:12 22 A. Prior to becoming an expert in this case, I knew very  
01:26:18 23 well the technology covered in the patents. I did not know  
01:26:21 24 the patent numbers themselves.

01:26:23 25 Q. Is it unusual to not be familiar with patent numbers?

01:26:27 1 A. From the perspective of a technical delegate to 3GPP,  
01:26:33 2 not at all. The technical delegates in 3GPP are concerned  
01:26:37 3 with developing technologies and finding solutions to  
01:26:40 4 problems. They're not concerned about patent numbers.

01:26:41 5 Q. Who owned these patents before PanOptis?

01:26:47 6 A. The patents before PanOptis were owned by LG, Samsung,  
01:26:54 7 and Panasonic.

01:26:56 8 MS. PETERSEN: If we could go to Slide 5, please.

01:26:59 9 Q. (By Ms. Petersen) What did you do first to determine  
01:27:00 10 whether the five patents are standard essential?

01:27:03 11 A. First I looked to see whether the companies had  
01:27:06 12 declared the patents as standards essential to ETSI. ETSI  
01:27:12 13 is the European Telecommunications Standards Institute.

01:27:17 14 And you'll see on the slide in front of you, these  
01:27:21 15 are the -- the declaration forms that those companies  
01:27:22 16 submitted to ETSI.

01:27:24 17 Q. Could you please explain to the jury why patent owners  
01:27:29 18 submit declarations to ETSI?

01:27:31 19 A. Yes, I can. So ETSI is a standardization body, and  
01:27:34 20 what that means is that ETSI publishes standards so that  
01:27:38 21 people can make products according to those standards.

01:27:41 22 ETSI's concerned that people can make products.  
01:27:46 23 That's what they're concerned about. So when they ask  
01:27:49 24 companies to declare that the companies have a patent which  
01:27:52 25 may be or may become essential to that standard, what

01:27:55 1 they're asking the patent owner for is an irrevocable  
01:27:59 2 promise that they will license that patent so that people  
01:28:02 3 can build products according to the standard. Otherwise,  
01:28:06 4 ETSI might publish a standard that nobody could use because  
01:28:10 5 a patent owner would block their use of it.

01:28:12 6 MS. PETERSEN: If we could please turn to Slide 6.

01:28:15 7 Q. (By Ms. Petersen) After you determined that the patent  
01:28:20 8 owner submitted declarations, what did you do next?

01:28:25 9 A. Next I reviewed and analyzed the claim charts for the  
01:28:29 10 patents-in-suit. And as you can see on the slide, these  
01:28:31 11 are the first -- these are the first pages for each of  
01:28:33 12 those claim charts that I analyzed.

01:28:35 13 Q. Ms. Dwyer, there is a set of documents in front of you  
01:28:39 14 on the stand. Could you please take a look at the  
01:28:42 15 documents in front of you? And after you've taken a look,  
01:28:54 16 could you please tell us what these documents are?

01:28:59 17 A. These documents are the claim charts for the five  
01:29:03 18 patents-in-suit.

01:29:03 19 Q. And are these the claim charts that you reviewed for  
01:29:08 20 your analysis in this case?

01:29:09 21 A. Yes, they are.

01:29:13 22 Q. How many pages are in these claim charts?

01:29:16 23 A. I wouldn't know exactly total, but I would expect  
01:29:20 24 around 300 or so. I know that the '284 patent claim chart  
01:29:24 25 alone has 91 pages.

01:29:26 1 Q. How many pages from those documents did you analyze?

01:29:28 2 A. Each and every one of them.

01:29:30 3 Q. Who created the claim charts for these patents?

01:29:34 4 A. The claim charts were provided to me by a technical

01:29:39 5 team that assists PanOptis.

01:29:40 6 Q. Could you please describe for us whether anyone helped

01:29:44 7 you during your analysis of these claim charts?

01:29:47 8 A. When I was analyzing these claim charts, when I had

01:29:53 9 questions or points that needed clarification, then I would

01:29:57 10 work with the technical team that provided me the claim

01:30:00 11 charts.

01:30:00 12                 In addition, I had a colleague of mine,

01:30:03 13 Mr. Nicolas Anderson, review the claim charts.

01:30:08 14                 Mr. Anderson was a 3GPP delegate to the RAND

01:30:11 15 working groups that do the radio part for the entire time

01:30:16 16 that LTE was being developed. And he's a very good chart

01:30:19 17 breaker, like myself. So I asked him to analyze them, as

01:30:22 18 well.

01:30:23 19 Q. And how did you analyze these claim charts?

01:30:25 20 A. I analyzed the claim charts using the same process that

01:30:28 21 I would have used at RIM, which is going element-by-element

01:30:33 22 and determining whether or not the standards text that is

01:30:37 23 mapped to that element truly represents what that element

01:30:40 24 is showing.

01:30:42 25                 And if element-by-element I could find the text or

01:30:47 1 the text that was mapped I felt was the correct text and it  
01:30:55 2 covered exactly what the claim taught, then you would say  
01:30:56 3 that that claim maps to the standard, or you might say that  
01:30:59 4 claim reads on the standard. Both mean that the patent is  
01:31:03 5 essential to the standard.

01:31:04 6 Q. Did you take any additional steps?

01:31:06 7 A. I have since reviewed the Court's claim construction,  
01:31:10 8 and it hasn't changed my opinion in any way.

01:31:13 9 Q. After reviewing the hundreds of pages in these claim  
01:31:17 10 charts, were you able to break the claim charts for these  
01:31:21 11 five patents?

01:31:22 12 A. No, I was not able to break the claim charts for these  
01:31:25 13 five patents, and neither was my colleague, Mr. Anderson.

01:31:28 14 Q. Why does it matter that neither you nor  
01:31:31 15 Mr. Anderson were able to break these claim charts?

01:31:34 16 A. The fact that my -- Mr. Anderson and myself couldn't  
01:31:39 17 break them after trying quite hard to do so is an  
01:31:43 18 indication that the claim charts are strong, water-tight,  
01:31:47 19 you might say, and the patents are true standards essential  
01:31:50 20 patents to the LTE standard.

01:31:51 21 Q. After you left the standards group at RIM and began  
01:31:59 22 your consulting work, did you investigate how many patent  
01:32:02 23 families you believe have been declared essential to the  
01:32:05 24 LTE standard?

01:32:05 25 A. Yes, I did. So, as of the end of last year, so the end

01:32:12 1 of 2019, I believe that there are 6,611 patent families  
01:32:19 2 that have been declared as essential to LTE.

01:32:21 3 Q. Of those LTE patent families, how many are truly  
01:32:26 4 essential ones to the LTE handsets?

01:32:28 5 A. It's my belief that approximately 607 of the 6,611  
01:32:38 6 declared patents are actually truly essential patents to  
01:32:41 7 LTE handsets.

01:32:42 8 Q. How did you calculate that number?

01:32:44 9 A. I got that number from using something that's called an  
01:32:49 10 essentiality rate. So I'll explain a little bit about what  
01:32:53 11 that is.

01:32:53 12 So if I were to tell you that 90 percent of the  
01:32:58 13 people in Harrison County love Texas barbecue, right --  
01:33:05 14 there's about 66,000 people, I believe, in Harrison  
01:33:09 15 County -- would you have assumed that I went out and talked  
01:33:12 16 to 66,000 people to find out if they like Texas barbecue to  
01:33:19 17 tell you that 90 percent of them do? Probably not, right,  
01:33:20 18 because that would take a long time.

01:33:22 19 So an essentiality rate is -- is just like that.

01:33:25 20 You take a smaller group of representative samples -- or,  
01:33:28 21 in this case, declared patents, and determine how many of  
01:33:31 22 those are truly essential, and then you would apply that to  
01:33:34 23 the entire population.

01:33:35 24 So that's what an essentiality rate is, and that's  
01:33:39 25 what I applied to the number of declared patents to get the

01:33:44 1 number of true SEPs.

01:33:46 2 Q. And where did you get that rate that you applied?

01:33:49 3 A. There are a lot of studies that are done on exactly

01:33:52 4 this question about what the true essentiality rate is.

01:33:57 5 So I referred to several of those studies from

01:34:00 6 reputable sources, and I also referred to comments made by

01:34:07 7 Ms. Mewes of Apple where she indicated that, in general

01:34:11 8 it's her belief that 1 out of 10 -- so 1 true SEP out of 10

01:34:16 9 declared SEPs -- these are standards essential patents --

01:34:18 10 that that's in general what she believed to be true.

01:34:23 11 MS. PETERSEN: Could we please pull up Slide 7?

01:34:26 12 Q. (By Ms. Petersen) After you verified that Samsung, LG,

01:34:27 13 and Panasonic submitted declarations to ETSI and that

01:34:28 14 these, based on your own analysis, are truly standard

01:34:31 15 essential patents, what did you do next?

01:34:33 16 A. Next I considered the strength of the patents and the

01:34:38 17 value of the technology in the patents. And in doing so, I

01:34:44 18 referred to the Innography tool, the database that --

01:34:48 19 Innography, which has patent analytics.

01:34:51 20 So Innography actually refers to a tool that uses

01:34:55 21 a database with over a hundred million patents in it, and

01:35:00 22 it provides various abilities to analyze those patents and

01:35:04 23 look at them in different ways. And one of the things that

01:35:06 24 it provides is something called the strength score.

01:35:09 25 And as you can see on this slide, the strength

01:35:12 1 score provided by Innography for these five patents is all  
01:35:15 2 in the top 25 percent.

01:35:18 3 Q. Why did you use Innography?

01:35:21 4 A. I used Innography because it's a tool that Apple uses.

01:35:25 5 So, again, according to Ms. Mewes, Apple's used that  
01:35:30 6 platform since at least 2017. And Ms. Mewes also said that  
01:35:35 7 Apple employees are trained to use this platform.

01:35:38 8 Q. What did you find when you analyzed the five patents in  
01:35:41 9 Innography?

01:35:42 10 A. As I mentioned, so the strength scores of the patents  
01:35:47 11 were all above 75 percent, so they were in the top quarter.

01:35:51 12 Q. How do those patent strength scores relate to your  
01:35:56 13 opinion?

01:35:56 14 A. So my opinion, with my knowledge of the technology and  
01:35:59 15 of the standards, is that the technology in these patents  
01:36:02 16 is valuable technology to the LTE standards. And so the  
01:36:07 17 Innography strength score was just really a corroboration  
01:36:10 18 of my own view that the patents are very strong.

01:36:12 19 Q. Ms. Dwyer, could you please tell us the conclusion that  
01:36:16 20 you reached regarding the five patents in this case?

01:36:18 21 A. The conclusion that I reached from the perspective of a  
01:36:23 22 technical delegate who's been in 3GP -- 3GPP meetings, as  
01:36:30 23 well as someone who is an expert in analyzing standards  
01:36:34 24 essential patents, is that the Plaintiffs' five patents are  
01:36:39 25 truly standards essential patents to the LTE standard.

01:36:41 1 Q. Thank you.

01:36:41 2 A. You're welcome.

01:36:44 3 THE COURT: You pass the witness, counsel?

01:36:48 4 MS. PETERSEN: Yes, pass the witness.

01:36:51 5 THE COURT: Cross-examination by the Defendant.

01:37:09 6 Proceed when you're ready, Ms. Smith.

01:37:12 7 MS. SMITH: Thank you, Your Honor.

01:37:13 8 Excuse me.

01:37:13 9 CROSS-EXAMINATION

01:37:15 10 BY MS. SMITH:

01:37:15 11 Q. Good afternoon, Ms. Dwyer.

01:37:18 12 A. Good afternoon.

01:37:18 13 Q. We've not yet met. My name is Melissa Smith, and I  
01:37:22 14 represent Apple. Nice to meet you.

01:37:24 15 A. Pleased to meet you, as well.

01:37:26 16 Q. Thank you.

01:37:26 17 Now, you don't -- you're not giving any  
01:37:29 18 infringement opinions today, are you?

01:37:31 19 A. I'm giving opinions on essentiality.

01:37:34 20 Q. And you're not giving an infringement opinion today,  
01:37:37 21 are you?

01:37:37 22 A. Essentiality opinions are essentially infringement  
01:37:42 23 opinions as to standards essential patents, because a  
01:37:46 24 product that uses the standard, uses the patents.

01:37:52 25 Q. You haven't looked at the Broadcom and Intel chips in

01:37:56 1 this case, have you?

01:37:57 2 A. I have not.

01:37:58 3 Q. And you haven't compared the claims in the patent to  
01:38:02 4 the accused features of iPhones and iPads, have you?

01:38:05 5 A. Not in the products, no.

01:38:06 6 Q. Thank you.

01:38:07 7 Now, you said you have 25 years of wireless  
01:38:10 8 communication experience, correct?

01:38:11 9 A. That's correct.

01:38:11 10 Q. And you previously worked at Research In Motion,  
01:38:15 11 which -- which is now BlackBerry, I believe?

01:38:17 12 A. That's correct.

01:38:18 13 Q. You were there for about 12 years?

01:38:22 14 A. That's right.

01:38:22 15 Q. Okay. And you -- you mentioned that you participated  
01:38:25 16 in these 3GPP meetings while working at BlackBerry,  
01:38:29 17 correct?

01:38:29 18 A. Correct.

01:38:29 19 Q. And -- and BlackBerry actually designed and  
01:38:32 20 manufactured smartphones like Apple, correct?

01:38:34 21 A. They did.

01:38:36 22 Q. You're listed as an inventor -- and I -- I wrote this  
01:38:40 23 down -- I think, on 220 patents; is that correct?

01:38:44 24 A. Granted worldwide patents.

01:38:45 25 Q. And at BlackBerry, you -- you analyze actually the --

01:38:49 1 the technical merits of -- of standard essential patents,  
01:38:52 2 correct?

01:38:52 3 A. I analyze the patents for their relation to the  
01:38:56 4 standards.

01:38:56 5 Q. Okay. And you did this by analyzing and creating claim  
01:39:03 6 charts of the alleged standard essential patents, didn't  
01:39:05 7 you?

01:39:05 8 A. I have created claim charts, yes.

01:39:07 9 Q. Now -- and you have -- you certainly have a technical  
01:39:13 10 expertise to create those claim charts, do you not?

01:39:16 11 A. Yes, I do.

01:39:18 12 Q. In this case, though, you didn't prepare any of those  
01:39:23 13 claim charts that you just put up on -- put up on the  
01:39:27 14 screen, did you?

01:39:28 15 A. No, I did not.

01:39:29 16 Q. You were actually provided those claim charts by  
01:39:32 17 counsel?

01:39:32 18 A. That's correct.

01:39:34 19 Q. So when she put up the claim chart for the '284 patent,  
01:39:40 20 you didn't prepare that claim chart?

01:39:42 21 A. No, I did not.

01:39:43 22 Q. You got that from counsel?

01:39:45 23 A. Correct.

01:39:46 24 Q. '332 claim chart, you just got that from counsel,  
01:39:50 25 didn't you?

01:39:51 1 A. That's right.

01:39:51 2 Q. Same thing for the '557, the '774, and the '833,

01:39:55 3 correct?

01:39:55 4 A. Correct.

01:39:56 5 Q. And you actually -- you don't know who selected the

01:40:03 6 patents that are in any of those claim charts, do you?

01:40:06 7 A. No, I do not.

01:40:07 8 Q. And you don't know how the patents were selected to be

01:40:12 9 charted in this case; is that correct?

01:40:14 10 A. That's correct.

01:40:16 11 Q. You actually don't even know the criteria that was used

01:40:20 12 for selecting the patents for the claim charts to be

01:40:25 13 asserted -- asserted in this case, do you?

01:40:26 14 A. No, I do not.

01:40:27 15 Q. Nor do you know whose job it was to select them?

01:40:31 16 A. That's correct.

01:40:32 17 Q. You don't know how long it took to prepare those claim

01:40:36 18 charts?

01:40:37 19 A. No, I do not.

01:40:37 20 Q. You don't know what was considered in preparing those

01:40:40 21 claim charts?

01:40:41 22 A. No, I don't.

01:40:43 23 Q. All you know is that counsel gave you those charts; is

01:40:49 24 that correct?

01:40:49 25 A. That's correct.

01:40:52 1 Q. Now, during your 25 years of working in the industry,  
01:41:00 2 you actually hadn't reviewed any of the asserted patents in  
01:41:03 3 this case until you did so under the direction of  
01:41:07 4 Plaintiffs' counsel; is that correct?  
01:41:09 5 A. That's correct.  
01:41:12 6 Q. And Plaintiffs' counsel for firms -- two firms, the  
01:41:18 7 McKool Smith firm and Irell & Man -- Manella -- excuse me;  
01:41:20 8 is that correct?  
01:41:20 9 A. Yes, that's correct.  
01:41:21 10 Q. And since last year, you've spent a good deal of time  
01:41:26 11 working for these two firms, haven't you?  
01:41:29 12 A. I have.  
01:41:29 13 Q. Actually, when you -- when you -- you go to your job  
01:41:32 14 every day and you're on the job, you spend I believe you  
01:41:36 15 testified between 40 and 50 percent of your time on the job  
01:41:39 16 working for one of these two firms; is that correct?  
01:41:42 17 A. Yes. It varies month-to-month but, on average, I'd say  
01:41:46 18 that's correct.  
01:41:46 19 Q. It's probably correct this month, leading up to trial,  
01:41:50 20 wasn't it?  
01:41:51 21 A. Yes, I would say.  
01:41:52 22 Q. And you and your consulting company have billed, I  
01:41:56 23 believe, \$380,000 since working on this litigation; is that  
01:42:02 24 correct?  
01:42:02 25 A. That sounds about right.

01:42:03 1 Q. Let's talk a little bit about the process of  
01:42:09 2 determining whether or not a patent is actually essential.  
01:42:12 3 Now, you'd agree that it'd take at least an hour  
01:42:19 4 to assess whether or not the claims of one patent was even  
01:42:23 5 relevant to the LTE standard, wouldn't you?  
01:42:26 6 A. I would expect much more than that.  
01:42:29 7 Q. Well, if you thought that there was a probability that  
01:42:32 8 the claims might map to the standard, you'd want to chart  
01:42:36 9 it, would you not?  
01:42:37 10 A. That would be the next step, yes.  
01:42:38 11 Q. And that claim chart would need to test each and every  
01:42:43 12 word of the element, correct?  
01:42:45 13 A. Yes, each and every word of the element needs to map,  
01:42:48 14 that's correct.  
01:42:48 15 Q. And each claim chart would take hours, several hours,  
01:42:52 16 correct?  
01:42:52 17 A. It very much depends on the claim, ma'am.  
01:42:57 18 Q. You're aware of the ETSI database? You testified  
01:43:02 19 regarding the ETSI -- ETSI database, correct?  
01:43:04 20 A. Yes.  
01:43:04 21 Q. And the ETSI database contains documents called IPR  
01:43:11 22 declarations; is that correct?  
01:43:12 23 A. Yes, it has records that contain the information from  
01:43:16 24 those, if that's what you mean.  
01:43:17 25 Q. That's what I mean.

01:43:20 1 A. Yes.

01:43:20 2 Q. Thank you, ma'am.

01:43:21 3 A. Uh-huh.

01:43:22 4 Q. And the purpose of the ETSI database is for companies

01:43:25 5 to declare things, patents and patent applications that may

01:43:31 6 be essential to the telecommunication standard?

01:43:33 7 A. I wouldn't agree that's the purpose, no.

01:43:35 8 Q. Well, companies can certainly declare their patents and

01:43:42 9 patent applications as essential to the telecommunication

01:43:45 10 standard and ETSI, can they not?

01:43:47 11 A. To the standards ETSI produces, yes, they can.

01:43:50 12 Q. Thank you.

01:43:50 13 And there's a lot of patents that are declared

01:43:53 14 essential to the -- to the LTE standard, correct?

01:43:56 15 A. Yes, there are.

01:43:57 16 Q. And you'd agree that there are a lot of patents that

01:44:02 17 are declared essential that actually aren't essential,

01:44:07 18 correct?

01:44:07 19 A. Yes, that's correct.

01:44:07 20 Q. You'd say, actually, that there are a great number of

01:44:12 21 declarations in the ETSI database which are not truly

01:44:18 22 essential at all, correct?

01:44:20 23 A. That's correct.

01:44:20 24 Q. There are actually over 195,000 of these declarations

01:44:28 25 by patent owners in the database, correct?

01:44:30 1 A. That sounds about right. There's some duplicates that  
01:44:33 2 are in that number you've cited, though.

01:44:36 3 Q. Give or take, but ballpark of 195,000?

01:44:40 4 A. Without the duplicates, I think you're talking about  
01:44:44 5 156,000, 200-ish.

01:44:46 6 Q. I'll accept that. Thank you, ma'am.

01:44:48 7 A. You're welcome.

01:44:49 8 Q. Now, let's work with your 156,000 dollar -- 56,000  
01:44:54 9 number.

01:44:55 10 It's impractical for a company to make decisions  
01:45:00 11 based on those IPR filings in the ETSI database, isn't it?

01:45:05 12 A. I would expect so.

01:45:07 13 Q. In fact, you'd say it's impossible for a company to  
01:45:15 14 make decisions based on the IPRs filed in the ETSI  
01:45:20 15 database, wouldn't you?

01:45:21 16 A. I guess it depends on what decisions you're taking.  
01:45:26 17 Could you be specific?

01:45:27 18 Q. Well, I can be specific. Would it be reasonable for a  
01:45:30 19 company to perform a check on every single essential  
01:45:35 20 patent?

01:45:35 21 A. A check meaning what kind of check?

01:45:41 22 Q. To determine whether the declaration was a true  
01:45:43 23 standard essential patent.

01:45:45 24 A. No, that wouldn't be practical.

01:45:46 25 Q. And ETSI itself doesn't perform any kind of check to

01:45:50 1 determine whether the patent or patent applications that  
01:45:53 2 have been declared are truly essential, do they?  
01:45:56 3 A. No, they don't.  
01:45:57 4 Q. And you're not aware of any company that has actually  
01:46:05 5 implemented a practice of reviewing all these declared  
01:46:09 6 standard essential patents in the ETSI IPR database, are  
01:46:12 7 you?  
01:46:12 8 A. No, I'm not aware of any company that has done that or  
01:46:15 9 would do it.  
01:46:16 10 Q. And you'd agree that charting those 156 patents would  
01:46:21 11 be an impractical undertaking for any company?  
01:46:25 12 A. Yes, I agree with that.  
01:46:30 13 Q. Now, you mentioned this -- this Internet -- Internet  
01:46:35 14 database, the Innography database, during -- during your  
01:46:40 15 direct, did you not?  
01:46:41 16 A. Yes, I did.  
01:46:41 17 Q. You also cited the Innography database in your expert  
01:46:44 18 report?  
01:46:45 19 A. Yes, I did.  
01:46:46 20 Q. And in your report, you actually included a table of  
01:46:50 21 data that you pulled from the Innography database, correct?  
01:46:53 22 A. Correct.  
01:46:57 23 Q. But -- but the Innography database, it's not your  
01:47:00 24 creation, is it?  
01:47:01 25 A. No, it's not.

01:47:01 1 Q. And it's certainly -- you referenced that Apple had  
01:47:05 2 used the database. It's not Apple's creation, is it?  
01:47:09 3 A. No, they're a subscriber.  
01:47:10 4 Q. Okay. And before your work in this case, you'd  
01:47:14 5 actually never -- never used the Innography database?  
01:47:16 6 A. No, not before this case, no.  
01:47:18 7 Q. So you got your log-on and password and access for this  
01:47:22 8 case?  
01:47:23 9 A. Yes.  
01:47:23 10 Q. And, actually, you didn't rely upon the Innography  
01:47:29 11 database in forming your -- your conclusions in this case,  
01:47:32 12 did you?  
01:47:32 13 A. No, I did not.  
01:47:36 14 Q. You didn't perform any analysis based on the Innography  
01:47:40 15 database, correct?  
01:47:40 16 A. It's not the basis of my analysis, no.  
01:47:44 17 Q. Okay. What you did is you got your password and you  
01:47:47 18 got your log-on, and you paid whatever fee they have, and  
01:47:51 19 you just repeated today what you saw on the website, didn't  
01:47:55 20 you?  
01:47:55 21 A. Yeah, those numbers are generated by Innography, that's  
01:47:59 22 correct.  
01:47:59 23 Q. And you have no idea whether Apple relies on a strength  
01:48:05 24 indicator from the Innography database, do you?  
01:48:07 25 A. I don't know what Apple uses the database for. I just

01:48:10 1 know they have it.

01:48:11 2 Q. Okay. Well, it'd be speculation to say what Apple does  
01:48:15 3 or does not rely upon in the Innography database, wouldn't  
01:48:17 4 it?

01:48:18 5 A. Yes, that's correct.

01:48:19 6 Q. You actually have no idea whether the Innography  
01:48:25 7 database accounts for things like validity, do you?

01:48:28 8 A. I know that it does not.

01:48:33 9 Q. Now, you didn't come up with the factors for  
01:48:37 10 determining the strength scores, did you?

01:48:38 11 A. It's not my database, so, no.

01:48:41 12 Q. And Apple didn't come up with the factors for  
01:48:45 13 determining the strength score?

01:48:46 14 A. No, they did not.

01:48:48 15 Q. Are you -- were you aware that the strength score will  
01:48:54 16 rise simply because a patent has been asserted in  
01:48:57 17 litigation?

01:48:58 18 A. Yes. The strength score is based on a number of  
01:49:01 19 factors, and litigation is one of them.

01:49:03 20 Q. All right. Well, let's explore that factor a little  
01:49:06 21 bit.

01:49:07 22 So say a party sues another company for patent  
01:49:11 23 infringement. Do you have that in your mind?

01:49:14 24 A. Uh-huh.

01:49:15 25 Q. But the company being sued doesn't infringe the patent;

01:49:18 1 you understand that?

01:49:19 2 A. Yes.

01:49:19 3 Q. The Innography strength score will actually rise --

01:49:25 4 they're going to get a high -- a higher score just because

01:49:28 5 they've been sued with that patent. Do you understand

01:49:30 6 that?

01:49:30 7 A. Yes, I do.

01:49:36 8 MS. SMITH: Now, Mr. Lee, if I can have Defense

01:49:41 9 Exhibit 8.2, please. There you go.

01:49:44 10 Q. (By Ms. Smith) You mentioned a minute ago that the

01:49:46 11 Innography database didn't consider invalidity; do you

01:49:49 12 remember that testimony?

01:49:50 13 A. Yes.

01:49:50 14 Q. Okay. The slide I'm directing your attention to here

01:49:56 15 references U.S. patent, I'm going to call it the '916; is

01:50:00 16 that fair?

01:50:00 17 A. Yes, I see that.

01:50:01 18 Q. You see the original assignee as LG?

01:50:04 19 A. Yes.

01:50:07 20 MS. PETERSEN: Objection, Your Honor.

01:50:07 21 THE COURT: What's your objection?

01:50:09 22 MS. PETERSEN: Objection, Your Honor. This is one

01:50:10 23 of the motion in limine rulings regarding patents not in

01:50:13 24 this action.

01:50:14 25 MS. SMITH: Your Honor, I believe that MIL was

01:50:16 1 withdrawn.

01:50:18 2 THE COURT: Which specific -- specific MIL order  
01:50:20 3 are you talking about, Ms. Petersen?

01:50:23 4 MS. SMITH: I think it's 7.

01:50:26 5 THE COURT: It's her objection. Let me hear from  
01:50:29 6 her.

01:50:30 7 MS. SMITH: I apologize, Your Honor.

01:50:45 8 MS. PETERSEN: My apologies, Your Honor, this  
01:50:49 9 relates to Apple's Motion in Limine No. 1 regarding patents  
01:50:54 10 litigated in a previous case.

01:50:56 11 MS. SMITH: To my knowledge, this has not been  
01:50:58 12 litigated in a prior case, Your Honor.

01:51:00 13 THE COURT: I took this to be a hypothetical.

01:51:02 14 MS. SMITH: It was, Your Honor.

01:51:03 15 THE COURT: That being the case, I'll overrule the  
01:51:05 16 objection.

01:51:06 17 And if we're talking about a real lawsuit  
01:51:12 18 somewhere else, that's different. But my understanding is  
01:51:15 19 this is an example only.

01:51:17 20 MS. SMITH: So far, Your Honor.

01:51:19 21 THE COURT: Well, we'll continue to watch it.

01:51:22 22 Let's continue.

01:51:23 23 MS. SMITH: Thank you, Your Honor.

01:51:24 24 Q. (By Ms. Smith) Ms. Dwyer, would it surprise you -- you  
01:51:29 25 saw that score -- that strength score of 90 to a hundred

01:51:33 1 percent, didn't you?

01:51:34 2 A. I do.

01:51:35 3 Q. And I heard you say you have three children, correct?

01:51:35 4 A. That's correct.

01:51:36 5 Q. And that's an A-plus in anyone's book, right?

01:51:36 6 A. Uh-huh.

01:51:38 7 Q. Okay.

01:51:38 8 THE COURT: Just a minute. Ms. Dwyer, that's  
01:51:40 9 about the third time you've said uh-huh. You'll need to  
01:51:44 10 say yes or no so it's clear in the record and not just a  
01:51:48 11 non-verbalized response. Okay?

01:51:48 12 THE WITNESS: Apologies, Your Honor.

01:51:50 13 THE COURT: All right. Let's continue.

01:51:52 14 Q. (By Ms. Smith) Would it surprise you to learn that  
01:51:54 15 this patent with the A-plus, 90 to 100 percentile rank on  
01:52:00 16 Innography, was actually ruled to be invalid in 2017?

01:52:04 17 MS. PETERSEN: Objection, Your Honor. I believe  
01:52:05 18 we're getting into something that is concerning a  
01:52:08 19 litigation that was another action not this case.

01:52:13 20 MS. SMITH: Your Honor, I -- I -- my next question  
01:52:15 21 was to ask for Your Honor's leave to approach on a MIL.  
01:52:20 22 I'm not there yet, but my next question gets there.

01:52:26 23 THE COURT: Well, if you're going to -- if you're  
01:52:28 24 going to ask leave to address the Court outside the jury's  
01:52:34 25 presence, I'll send them out now, and we'll get to the

01:52:36 1 bottom of it now.

01:52:36 2 MS. SMITH: Thank you, Your Honor.

01:52:37 3 THE COURT: Ladies and gentlemen of the jury,

01:52:38 4 obviously, I'm going to need to take this up outside your  
01:52:40 5 presence. Please step into the jury room.

01:52:42 6 Leave your notebooks in your chairs, if you will.

01:52:45 7 Don't discuss the case with each other. And I expect this  
01:52:49 8 to be short, so I hope to have you back in here in just a  
01:52:49 9 couple of minutes.

01:52:52 10 With that, the jury is excused to the jury room.

01:52:55 11 COURT SECURITY OFFICER: All rise.

01:52:57 12 (Jury out.)

01:52:57 13 THE COURT: All right. Be seated.

01:53:16 14 Ms. Petersen, let me have the basis of your  
01:53:20 15 objection, please.

01:53:20 16 MS. PETERSEN: Yes, Your Honor. This -- may I  
01:53:23 17 approach the podium, Your Honor?

01:53:25 18 THE COURT: That's fine.

01:53:40 19 Now that Mr. Sheasby's told you what to tell me,  
01:53:42 20 why don't you make your objection.

01:53:44 21 MS. PETERSEN: Your Honor, this patent is  
01:53:46 22 regarding and related to a case involving PanOptis and  
01:53:51 23 Huawei. And this was something that was expressly told by  
01:53:54 24 the Court to Apple to not start getting into these types of  
01:53:57 25 matters regarding invalidation of patents that are not in

01:54:00 1 this case.

01:54:02 2 THE COURT: What's your response, Ms. Smith?

01:54:06 3 MS. SMITH: This patent actually, to my knowledge,  
01:54:08 4 is not involved in any case. I pulled an example of a  
01:54:12 5 patent that had been invalidated randomly and out of the LG  
01:54:17 6 pile to get the -- to -- to test the reliability of the  
01:54:22 7 ranking system on the Innography database. I have  
01:54:25 8 absolutely no desire to go into the details of any  
01:54:27 9 litigation.

01:54:28 10 What I had planned to do is hand the witness the  
01:54:33 11 PTAB order and ask her if she sees that it was invalidated,  
01:54:37 12 and move along. It's an example. It's hypothetical. It  
01:54:41 13 has nothing to do with the Huawei litigation, to my  
01:54:44 14 knowledge.

01:54:48 15 So I would show the witness the document and ask  
01:54:50 16 her if the patent had been invalidated. And, again, this  
01:54:54 17 is just a sample patent that I've pulled to test the  
01:54:58 18 reliability of the Innography database that she's  
01:55:01 19 testifying as to.

01:55:04 20 THE COURT: What's your reply, Ms. Petersen?

01:55:06 21 MS. PETERSEN: Your Honor, any invalidation of  
01:55:09 22 this patent would be a case and an outside action, and,  
01:55:16 23 therefore, based on the Court's motion in limine ruling, it  
01:55:20 24 should not come into this case. It will be unduly  
01:55:23 25 prejudicial and is not probative of the issue.

01:55:31 1 MS. SMITH: Your Honor, I think that the MIL --  
01:55:33 2 there was a MIL order that said we could not refer to  
01:55:35 3 third-party patents. That was withdrawn by the Plaintiff.

01:55:39 4 There's an order that I can't make reference to  
01:55:42 5 court proceedings and things of that nature. All I want to  
01:55:46 6 do is hand the witness a document and ask her if the patent  
01:55:48 7 was invalidated. No further reference to any proceeding,  
01:55:51 8 any ruling, any cause number, anything at all.

01:55:57 9 THE COURT: I think, Ms. Smith, what you should do  
01:55:59 10 is ask the witness to assume that the patent has been  
01:56:02 11 invalidated and not go into how or why or where or under  
01:56:10 12 what authority, and make that a -- make that a condition or  
01:56:13 13 predicate of your question.

01:56:14 14 MS. SMITH: Okay.

01:56:14 15 THE COURT: And you should be able to do what  
01:56:17 16 you're trying to accomplish without getting into a  
01:56:24 17 violation of the MIL.

01:56:26 18 MS. SMITH: Thank you, Your Honor. Understood.  
01:56:27 19 We shouldn't.

01:56:27 20 MS. PETERSEN: Your Honor, would it be possible to  
01:56:29 21 see the IPR order regarding the --

01:56:31 22 THE COURT: Not if it's not going to be used with  
01:56:33 23 the witness, and I don't think it's going to be used with  
01:56:35 24 the witness.

01:56:35 25 MS. SMITH: It's not, Your Honor.

01:56:42 1 MS. PETERSEN: Okay.

01:56:42 2 THE COURT: Let's -- go ahead, Ms. Petersen.

01:56:44 3 MS. PETERSEN: My understanding then is that this  
01:56:46 4 is purely hypothetical, and she cannot state before the  
01:56:49 5 jury that this has actually been invalidated.

01:56:51 6 THE COURT: If you think that the way it's  
01:56:53 7 presented after I bring the jury back is a continuing  
01:56:57 8 violation, you have the right to re-raise the same  
01:56:59 9 objection.

01:57:03 10 MS. PETERSEN: Thank you, Your Honor.

01:57:04 11 THE COURT: Okay? All right.

01:57:08 12 MR. SHEASBY: Your Honor, I think there's been a  
01:57:09 13 misrepresentation in the record. The only way the patents  
01:57:12 14 have been subject to IPR is through lawsuits that have been  
01:57:14 15 filed. And so I want to be very clear, I'm going -- we're  
01:57:18 16 going to request a corrective instruction on this,  
01:57:21 17 Your Honor. This is not appropriate.

01:57:22 18 THE COURT: Well, Mr. Sheasby, if you -- if you  
01:57:25 19 need to take this witness, then Ms. Petersen needs to sit  
01:57:28 20 down, and you need to take this witness. If she's the  
01:57:31 21 lawyer with this witness, she's going to have to make the  
01:57:33 22 arguments, and she's going to have to request whatever is  
01:57:37 23 requested of the Court.

01:57:39 24 MR. SHEASBY: I understand, Your Honor.

01:57:40 25 THE COURT: I mean, this is getting ridiculous. I

01:57:44 1 can't hear Ms. Smith for you talking to Ms. Petersen  
01:57:46 2 telling her what to argue to the Court. She's a very  
01:57:49 3 capable lawyer, and you need to let her take this witness,  
01:57:53 4 or if you don't have confidence in her, you need to take  
01:57:56 5 the witness away from her.

01:57:57 6           But you're not going -- you're not going to -- let  
01:58:04 7 me just say it this way. If you're going to be the lead  
01:58:08 8 lawyer with a witness, you're going to be the lead lawyer  
01:58:10 9 with a witness. If you're not, then the other lawyers in  
01:58:14 10 this case are not puppets for you to act through, and  
01:58:16 11 that's the way it's coming across to me.

01:58:18 12           And you're either going to have to let go and let  
01:58:21 13 the other lawyers do what the other lawyers do, or you're  
01:58:24 14 going to have to take control of them and let them sit down  
01:58:26 15 and you take the witnesses. But you're not going to follow  
01:58:31 16 every other lawyer on the Plaintiffs' team around through  
01:58:33 17 this trial and whisper constantly in their ears as to what  
01:58:39 18 to say, or during examination by the other counsel, stand  
01:58:39 19 up, lean across the table, and lecture them on how to  
01:58:43 20 prepare for the next go-round. That's just not  
01:58:46 21 appropriate.

01:58:46 22           Now, I -- I have no problem with counsel  
01:58:49 23 consulting with each other. I've done it. Every lawyer  
01:58:52 24 does it. But this is way beyond that. And I thought we  
01:58:56 25 had made that pretty clear when I sent the jury out

01:58:58 1 earlier. But, apparently, it continues to be a problem.

01:59:03 2 And I'm happy for you to take every witness in this case,  
01:59:07 3 as long as they're yours from the beginning.

01:59:09 4           But I am not going to let lawyers tag team  
01:59:13 5 witnesses. I won't let the Defense do it. I'm not going  
01:59:15 6 to let the Plaintiffs do it. And, in effect, you are  
01:59:20 7 tag-teaming every other Plaintiffs' lawyer in this case,  
01:59:22 8 and that's just not -- that's just not appropriate. And  
01:59:26 9 it's -- it's highly distractive to me and to the jury.

01:59:30 10          MR. SHEASBY: I understand, Your Honor.

01:59:31 11          THE COURT: If you're going to request a  
01:59:34 12 corrective instruction or if the Plaintiff is going to  
01:59:36 13 request a -- a corrective instruction, then I'll hear from  
01:59:40 14 Ms. Petersen on it before I bring the jury in so I'll know  
01:59:44 15 whether I'm going to grant it or deny it.

01:59:46 16          If that's not going to be requested, then let me  
01:59:49 17 know, and I'll bring the jury in.

01:59:51 18          Do you have a request of the Court, Ms. Petersen?

01:59:54 19          MS. PETERSEN: Yes, Your Honor, we request a  
01:59:56 20 corrective instruction.

01:59:58 21          THE COURT: Do you want to tell me what you're  
02:00:02 22 requesting that I instruct the jury on to be corrective?

02:00:05 23          MS. PETERSEN: Yes, Your Honor. Would you like me  
02:00:06 24 to approach the podium?

02:00:08 25          THE COURT: I can hear you fine.

02:00:09 1 MS. PETERSEN: Okay. We request that the jury --  
02:00:14 2 that any --

02:00:16 3 THE COURT: They've not seen anything from the  
02:00:18 4 PTAB.

02:00:18 5 MS. PETERSEN: Right.

02:00:19 6 THE COURT: They've not seen any order from any  
02:00:22 7 other Court. I think we stopped this well before it got  
02:00:25 8 there. And my understanding is Ms. Smith is going to  
02:00:28 9 proceed, if she chooses to continue this line of  
02:00:30 10 questioning, on a non--specific hypothetical basis.

02:00:34 11 She's going to ask the witness to assume for her  
02:00:37 12 that there's been an invalidation without -- without  
02:00:40 13 confirming that there actually has, or if there has, where  
02:00:44 14 it came from. And if she does that, I have no problem with  
02:00:47 15 that being a violation of the orders in limine.

02:00:50 16 MS. PETERSEN: Would it --

02:00:51 17 THE COURT: If she doesn't, then you can re-raise  
02:00:53 18 your objection. But so far, there's not been anything for  
02:00:55 19 the jury to be corrected on, in my view.

02:00:58 20 MS. PETERSEN: Okay. Would it be possible to  
02:01:00 21 instruct the jury to understand that this is a hypothetical  
02:01:03 22 question being posed to them?

02:01:04 23 THE COURT: Well, when it's posed as a  
02:01:06 24 hypothetical question, if they don't get it, then maybe we  
02:01:11 25 can do that. But as of right now, they haven't even heard

02:01:14 1 it posed as a hypothetical because they've been taken out  
02:01:18 2 of the courtroom while we've had this discussion.

02:01:20 3 MS. PETERSEN: Okay.

02:01:20 4 THE COURT: So that hasn't happened yet.

02:01:22 5 MS. PETERSEN: All right. Thank you, Your Honor.

02:01:23 6 THE COURT: All right. Request for an  
02:01:26 7 instructive -- a curative instruction from the Plaintiffs  
02:01:27 8 is denied at this point. You have the right to reurge it  
02:01:30 9 if you think going forward it's warranted by what actually  
02:01:34 10 happens in the courtroom.

02:01:34 11 All right. Are you clear on the Court's guidance  
02:01:37 12 as to how to -- how to avoid the violation of the order in  
02:01:41 13 limine, Ms. Smith?

02:01:42 14 MS. SMITH: Yes, Your Honor.

02:01:43 15 THE COURT: Then let's bring in the jury, please.

02:01:45 16 COURT SECURITY OFFICER: All rise.

02:01:46 17 (Jury in.)

02:02:12 18 THE COURT: Thank you, ladies and gentlemen.

02:02:14 19 Please be seated.

02:02:14 20 All right. Ms. Smith, please continue with your  
02:02:19 21 cross-examination, please.

02:02:22 22 MS. SMITH: Thank you, Your Honor.

02:02:25 23 Q. (By Ms. Smith) Ms. Dwyer, I am going to ask you to  
02:02:28 24 assume that -- that this patent is -- this hypothetical  
02:02:33 25 patent that I have presented is invalid.

02:02:38 1 Under that hypothetical, this invalid patent would  
02:02:41 2 actually rank higher than some of the asserted patents,  
02:02:48 3 wouldn't it?  
02:02:48 4 A. With this percentile, it would, yes.  
02:02:51 5 Q. And you're not aware of any process or procedure at  
02:02:58 6 Innography for -- for going through and sorting through  
02:03:01 7 that big database of 156,000 patents every day to determine  
02:03:06 8 which patents are still valid and which are not, are you?  
02:03:09 9 A. No. Patents have a presumption of validity until  
02:03:13 10 that's been proven wrong.  
02:03:16 11 Q. You didn't look at any other portfolios of patents in  
02:03:22 12 the Innography -- Innography database, did you?  
02:03:25 13 A. No, I did not.  
02:03:26 14 Q. And you actually have no idea whether all declared  
02:03:34 15 essential patents have an average strength rating of 90  
02:03:38 16 percent or above or high marks?  
02:03:41 17 A. Actually, I know they do not.  
02:03:44 18 Q. But you have no idea where other families rank because  
02:03:47 19 you didn't look at them, correct?  
02:03:49 20 A. I looked at a number of families that are owned by the  
02:03:53 21 Plaintiff.  
02:03:53 22 Q. Aside from those owned by the Plaintiff, ma'am?  
02:03:57 23 A. I've not looked at others, no.  
02:04:00 24 Q. Thank you.  
02:04:00 25 And you actually didn't look, aside from the

02:04:03 1 Plaintiff, at any other standard essential patents on the  
02:04:08 2 Innography database, did you?

02:04:08 3 A. No, I have not.

02:04:11 4 Q. And you didn't find it practical to assess every one of  
02:04:16 5 the 6,000 patent families declared essential to LTE -- LTE  
02:04:20 6 on the Innography database, did you?

02:04:21 7 A. No, I did not.

02:04:33 8 Q. And, ma'am, one last question. You're -- you're an  
02:04:43 9 engineer, correct?

02:04:43 10 A. Yes, I am.

02:04:44 11 Q. And you never -- you haven't taken a look at the  
02:04:47 12 Qualcomm or Intel chips, have you?

02:04:48 13 A. No. I've built products with them, though.

02:04:53 14 Q. And you haven't looked at the source code involved in  
02:04:55 15 this case, have you?

02:04:56 16 A. I have not, no.

02:04:58 17 Q. Thank you, ma'am.

02:04:59 18 A. You're welcome.

02:04:59 19 MS. SMITH: Your Honor, I'll pass the witness.

02:05:01 20 THE COURT: Is there redirect, Ms. Petersen?

02:05:04 21 MS. PETERSEN: Briefly, Your Honor.

02:05:06 22 THE COURT: Please proceed.

02:05:06 23 REDIRECT EXAMINATION

02:05:08 24 BY MS. PETERSEN:

02:05:08 25 Q. Ms. Dwyer, what was your job in this case?

02:05:19 1 A. My job was to review the patents-in-suit and to  
02:05:24 2 determine if they were truly standards essential patents to  
02:05:28 3 the LTE standard from the perspective of somebody who's  
02:05:32 4 been at the meetings and attended them.

02:05:34 5 Q. And could you please remind us of your conclusion that  
02:05:37 6 you reached?

02:05:37 7 A. I concluded, after reviewing the patents and their  
02:05:40 8 claim charts, that they are truly standards essential  
02:05:43 9 patents to the LTE standard.

02:05:44 10 Q. And Ms. Smith addressed the ETSI declaration process.  
02:05:54 11 Why do companies submit declarations to ETSI?

02:05:58 12 A. So, as I mentioned, what that essentially is, is a  
02:06:03 13 database of irrevocable promises.

02:06:06 14 And so ETSI asks anybody who might have a patent  
02:06:10 15 that is essential to the standard to make that promise that  
02:06:13 16 they will license it so that the standard itself won't be  
02:06:17 17 blocked and that people will be able to make products off  
02:06:19 18 the standard, because it would be an incredibly bad  
02:06:24 19 situation for a standards body to publish a standard that  
02:06:27 20 was then blocked because there was somebody who owned a  
02:06:30 21 patent who wouldn't license it.

02:06:32 22 So that's what the declaration process is all  
02:06:34 23 about. It's about companies making a promise that they  
02:06:39 24 can't withdraw; that they'll license those patents.

02:06:40 25 Q. Ms. Smith also touched on companies and their ability

02:06:44 1 to examine patents and declarations within the ETSI  
02:06:48 2 database. Could you please explain whether there are tools  
02:06:53 3 to examine these types of patents and declarations?  
02:06:56 4 A. There are definitely tools to examine them.  
02:07:00 5 Innography, of course, is one. Innography does a lot of  
02:07:01 6 things, but you can certainly pull all sorts of reports on  
02:07:07 7 standards essential patents, you can gather up reports by  
02:07:09 8 who owns them, by the inventors. There's a number of  
02:07:13 9 things that you can do related to standards essential  
02:07:15 10 patents with Innography.  
02:07:16 11 Q. Why did you use Innography?  
02:07:17 12 A. I used it because Apple used it.  
02:07:20 13 Q. And how did Innography inform your independent  
02:07:25 14 examination of the claim charts?  
02:07:29 15 A. Well, it didn't. I examined the claim charts on the  
02:07:31 16 merits of the charts themselves and on what they taught me,  
02:07:35 17 and I examined them for their truthfulness. It didn't have  
02:07:38 18 anything to do with Innography, that examination.  
02:07:41 19 Q. And did Innography do anything to support your opinion?  
02:07:43 20 A. No, it did not.  
02:07:45 21 Q. Could you please explain whether these scores informed  
02:07:54 22 any basis of your opinion regarding their relation to LTE  
02:07:59 23 and the standard?  
02:08:00 24 A. No, they did not. I'm very familiar with the LTE  
02:08:04 25 standards and the technology in them, and I understand

02:08:07 1 these patents very well, and my opinion on the strength of  
02:08:09 2 the patents is based on that knowledge, not on the  
02:08:12 3 Innography database.

02:08:12 4 Q. And could you remind us of the types of scores these  
02:08:18 5 patents received in the Innography database?

02:08:19 6 A. The patents-in-suit received scores from 70 percent to  
02:08:22 7 92 percent.

02:08:24 8 Q. Thank you.

02:08:25 9 MS. PETERSEN: No further questions.

02:08:27 10 A. You're welcome.

02:08:28 11 THE COURT: Further cross-examination, Ms. Smith?

02:08:31 12 MS. SMITH: One question, Your Honor.

02:08:31 13 RECROSS-EXAMINATION

02:08:35 14 BY MS. SMITH:

02:08:35 15 Q. Ms. Dwyer, you never -- you never checked the Qualcomm  
02:08:38 16 or the Intel chips to see if they actually use the five  
02:08:42 17 patents in this case, did you?

02:08:43 18 A. No, I did not.

02:08:44 19 Q. Thank you, ma'am.

02:08:45 20 A. You're welcome.

02:08:46 21 MS. SMITH: Pass the witness, Your Honor.

02:08:47 22 THE COURT: Any additional direct?

02:08:50 23 MS. PETERSEN: No, Your Honor.

02:08:51 24 THE COURT: You may step down, Ms. Dwyer.

02:08:54 25 THE WITNESS: Thank you very much, Your Honor.

02:08:55 1 THE COURT: You're quite welcome.

02:09:02 2 MS. PETERSEN: Your Honor, may the witness be

02:09:03 3 excused?

02:09:04 4 THE COURT: Is there any objection?

02:09:05 5 MS. SMITH: No, Your Honor.

02:09:06 6 THE COURT: The witness is excused.

02:09:08 7 Plaintiff, call your next witness.

02:09:12 8 MR. SHEASBY: Your Honor, Plaintiffs call

02:09:16 9 Mr. Rodermund, Apple's expert, by video.

02:09:18 10 THE COURT: By deposition?

02:09:19 11 MR. SHEASBY: Yes, sir.

02:09:20 12 THE COURT: How long do you expect the witness by

02:09:21 13 deposition to be?

02:09:22 14 MR. SHEASBY: I believe it's 12 minutes,

02:09:25 15 Your Honor.

02:09:25 16 THE COURT: All right. Do you have an allocation

02:09:26 17 of time for the Court?

02:09:28 18 MR. SHEASBY: We do, Your Honor. It is actually 9

02:09:35 19 minutes, and the allocation is 6 minutes, 59 seconds for

02:09:41 20 PanOptis and 2 minutes, 33 seconds for Apple.

02:09:44 21 THE COURT: Thank you.

02:09:44 22 Please proceed with the witness by deposition.

02:09:47 23 (Videoclip played.)

02:09:50 24 QUESTION: Mr. Rodermund, do you have a copy of

02:10:01 25 your report in front of you?

02:10:05 1 ANSWER: Yes, I do.

02:10:06 2 QUESTION: All the report -- all the words in the

02:10:08 3 report are yours; is that correct?

02:10:10 4 ANSWER: That's correct.

02:10:12 5 QUESTION: Do you know of any Apple or Samsung

02:10:15 6 devices that are sold in Europe that don't implement the

02:10:19 7 LTE standards?

02:10:24 8 ANSWER: I'm not aware of any, but I haven't

02:10:26 9 looked at the whole portfolio of devices.

02:10:31 10 QUESTION: The new iPhone X and above implement

02:10:37 11 the LT -- LTE standards, correct?

02:10:40 12 ANSWER: I believe so.

02:10:41 13 QUESTION: Why don't you go ahead and open

02:10:43 14 Exhibits 3 and Exhibit 4.

02:10:53 15 ANSWER: There's no document named Exhibit 4.

02:10:56 16 QUESTION: Why don't you refresh.

02:10:59 17 ANSWER: Oh, yes, now.

02:11:02 18 QUESTION: Let me know when you've looked through

02:11:05 19 them.

02:11:05 20 ANSWER: I've had a brief look, yes.

02:11:07 21 QUESTION: Exhibit 3 and Exhibit 4 indicate that

02:11:14 22 the most recent Apple and Samsung devices implement the LTE

02:11:21 23 standards, correct?

02:11:21 24 ANSWER: Yes, that's what it says in these

02:11:26 25 documents.

02:11:28 1           QUESTION: Okay. So let me ask you my next  
02:11:31 2 question. Do you see at certification is a series of what  
02:11:39 3 you described as test cases; is that correct?

02:11:46 4           ANSWER: Yes.

02:11:47 5           QUESTION: Okay. Let me ask you my next question,  
02:11:49 6 which is that, if a patent is essential to the LTE  
02:11:57 7 standard, that would mean that its use was necessary to  
02:12:07 8 comply with the LTE standard, correct? It was truly  
02:12:10 9 essential.

02:12:11 10          ANSWER: Well, it depends. The standard defines  
02:12:15 11 how the devices should behave at various interfaces to  
02:12:21 12 ensure interoperability. And so it's important that the  
02:12:31 13 communication which comes out of the device is -- is  
02:12:35 14 correct and is according to what's defined in the standard.

02:12:39 15          QUESTION: What's the def -- definition of an  
02:12:44 16 essential patent?

02:12:51 17          ANSWER: There is a definition in the ETSI IPR  
02:12:54 18 policy, which says that -- I have to load it up, actually,  
02:13:01 19 but that you have to be product compliant if the standard  
02:13:13 20 you're, you have to -- you -- you should use the -- the  
02:13:22 21 essential patents along these lines.

02:13:25 22          QUESTION: An essential patent for ETSI is a  
02:13:27 23 patent that has to be implemented in order to comply with  
02:13:31 24 the LTE specification, correct?

02:13:33 25          ANSWER: Well, there are also parts of the LTE

02:13:41 1 specification which are left for -- for implementation.

02:13:50 2 So it's not necessarily described how you achieve  
02:13:57 3 a certain desired ETSI interface. So there are also  
02:14:07 4 different options to choose from the various possibility  
02:14:12 5 included.

02:14:12 6 So a device -- certain device definitely does not  
02:14:20 7 have to implement all essential patents which are in the  
02:14:26 8 LTE standard.

02:14:27 9 QUESTION: Let me ask it this way: In order for a  
02:14:32 10 device -- if -- if a patent is essential to the LTE  
02:14:34 11 standard, it's necessary for interoperability, fair?

02:14:37 12 ANSWER: It depends. So there are also patents  
02:14:45 13 which are essential which -- which are only becoming  
02:14:49 14 essential if you're actually implementing a specific  
02:14:56 15 function.

02:14:56 16 So the device vendors, also network equipment  
02:15:00 17 vendors, they are free -- in some sense, they have some  
02:15:05 18 freedom to choose specific functions. Not only the  
02:15:08 19 frequency bandwidth support, but there are other functions  
02:15:13 20 which are -- of which they can, for example, choose  
02:15:16 21 different options.

02:15:16 22 So a device does not have to implement all  
02:15:20 23 essential patents to be compliant with the standard.

02:15:25 24 QUESTION: So I've marked as the next exhibit in  
02:15:29 25 order Exhibit 21. Let me know when you get this.

02:15:32 1 ANSWER: Okay. So I have it open.

02:15:37 2 QUESTION: You'll see it says: With LTE iPhone 5

02:15:42 3 and later, you can browse the web, stream content, or

02:15:47 4 download apps and games at blazing-fast speeds. Do you see

02:15:51 5 that, sir?

02:15:52 6 ANSWER: Yes.

02:15:52 7 QUESTION: For a list of carriers that have other

02:15:55 8 certified LTE networks and iPhone, refer to the chart

02:15:58 9 below. Do you see that, sir?

02:15:59 10 ANSWER: Yes.

02:16:00 11 QUESTION: Does this refresh your recollection

02:16:03 12 that iPhones, of iPhone 5 and later, practice the LTE

02:16:16 13 standard?

02:16:17 14 ANSWER: That's the impression I get from this

02:16:19 15 document, yes.

02:16:20 16 QUESTION: Do you have any basis for disputing

02:16:23 17 that?

02:16:23 18 ANSWER: I don't dispute that the iPhone 5 and

02:16:35 19 later supports LTE technology.

02:16:39 20 ATTORNEY: Can I get that question and answer read

02:16:42 21 back, Madam Court Reporter?

02:16:52 22 Question: Do you have any basis for disputing

02:16:55 23 that?

02:16:56 24 Answer: I don't dispute that the iPhone 5 and

02:17:00 25 later supports the LTE technology.

02:17:03 1           QUESTION: Do you know of any iPhone 5 or later  
02:17:09 2 device that does not implement the LTE standard?  
02:17:11 3           ANSWER: I did not investigate this.  
02:17:15 4           QUESTION: I'm just -- sitting here today, are you  
02:17:17 5 aware of any?  
02:17:18 6           ANSWER: Sir?  
02:17:23 7           QUESTION: Sitting here today, are you aware of  
02:17:25 8 any phone app -- any iPhone app to the iPhone 5 that  
02:17:30 9 doesn't implement the LTE standard?  
02:17:32 10          ANSWER: I'm not aware of any model, but I did not  
02:17:35 11 have a look at all of the different models they have.  
02:17:38 12          QUESTION: Okay. So let's look at the iPhone 6.  
02:17:51 13 One second.  
02:17:51 14          Okay. Look at Exhibit 22?  
02:17:55 15          ANSWER: Okay.  
02:17:56 16          QUESTION: Have you reviewed it?  
02:17:57 17          ANSWER: Yeah, I opened it.  
02:18:04 18          QUESTION: Have you reviewed it?  
02:18:05 19          ANSWER: Not yet. Okay.  
02:18:14 20          QUESTION: All right. Does this refresh your  
02:18:15 21 recollection that the iPhone 6 practices the LTE standard?  
02:18:18 22          ANSWER: Yes, it implements LTE technology.  
02:18:22 23          QUESTION: Do you have any basis to contend that  
02:18:27 24 the iPhone 6 doesn't practice the LTE standard?  
02:18:32 25          Let me -- let me withdraw the question.

02:18:35 1 Go ahead, answer the question.

02:18:38 2 Let me withdraw it. Let me reask it.

02:18:41 3 This document indicates -- does this document

02:18:44 4 refresh your recollection that the iPhone 6 practices the

02:18:48 5 LTE standard?

02:18:49 6 ANSWER: Yes, the document mentions that the

02:18:53 7 iPhone operates in LTE networks.

02:18:57 8 QUESTION: Is the answer to my question yes, sir?

02:19:00 9 ANSWER: Yes, it practices the LTE standard.

02:19:02 10 QUESTION: Does this document refresh your

02:19:07 11 recollection that the iPhone 7 practices the LTE standard?

02:19:10 12 ANSWER: So, yes, the document shows that the

02:19:16 13 iPhone 7 supports the LTE standard. And as for the

02:19:21 14 previous models, it claims to operate in LTE networks, and

02:19:28 15 it's also an expansion in this case, which spans operation.

02:19:32 16 However, I have no knowledge about how and which

02:19:36 17 parts of the LTE standard have been implemented by this

02:19:39 18 model.

02:19:40 19 QUESTION: It's enough for it to be able to

02:19:42 20 communicate on the LTE networks in the United States,

02:19:48 21 correct?

02:19:48 22 ANSWER: That's what the document is mentioning,

02:19:55 23 that it's operating in the LTE networks in the United

02:19:57 24 States.

02:19:59 25 (Videoclip ends.)

02:20:02 1 THE COURT: Does that complete this witness by  
02:20:04 2 deposition?

02:20:04 3 MR. SHEASBY: It does, Your Honor.

02:20:07 4 THE COURT: Please call your next witness,  
02:20:09 5 counsel.

02:20:09 6 MR. SHEASBY: Your Honor, for the next witness,  
02:20:13 7 we're going to need to seal the courtroom --

02:20:15 8 THE COURT: Tell me who your next witness is.

02:20:18 9 MR. SHEASBY: Our next witness is Ms. Jayna Whitt,  
02:20:21 10 an Apple lawyer.

02:20:23 11 THE COURT: And is this by deposition or live?

02:20:26 12 MR. SHEASBY: It is, Your Honor, it's deposition.

02:20:28 13 THE COURT: Then before this witness is presented  
02:20:31 14 by deposition, at the request of Plaintiffs' counsel, I'll  
02:20:35 15 order the courtroom sealed. All persons present not  
02:20:37 16 subject to the protective order in this case, or I assume  
02:20:43 17 aligned with the Defendant because it's the Defendant's  
02:20:46 18 proprietary information, are ordered to excuse themselves  
02:20:51 19 and remain outside the courtroom until it's unsealed.

02:20:54 20 (Courtroom sealed.)

02:20:54 21 (This portion of the transcript is sealed  
02:20:54 22 and filed under separate cover as

02:35:23 23 Sealed Portion No. 6.)

02:35:23 24 (Courtroom unsealed.)

02:35:24 25 THE COURT: We've been back from lunch

02:35:28 1 approximately an hour and a half. We're going to take a  
02:35:31 2 short recess before we begin with this next witness.

02:35:34 3                 Ladies and gentlemen of the jury, if you'll just  
02:35:36 4 close your notebooks and leave them in your chairs, we'll  
02:35:39 5 be back in here shortly to continue with the next  
02:35:42 6 Plaintiffs' witness. Follow all my instructions, including  
02:35:46 7 not to discuss the case with anyone, including yourselves.

02:35:49 8 And, again, I hope this will be relatively short.

02:35:52 9                 The jury is excused for recess at this time.

02:35:54 10              COURT SECURITY OFFICER: All rise.

02:35:56 11              (Jury in.)

02:36:36 12              (Recess.)

02:51:16 13              COURT SECURITY OFFICER: All rise.

02:51:17 14              THE COURT: Be seated, please.

02:51:20 15              All right. Plaintiff, are you prepared to call  
02:51:33 16 your next witness?

02:51:34 17              MS. TRUELOVE: Yes, Your Honor, we are. We call  
02:51:36 18 Dr. Rebecca Reed-Arthurs.

02:51:38 19              THE COURT: All right. Let's bring the jury in,  
02:51:40 20 please.

02:51:40 21              COURT SECURITY OFFICER: All rise.

02:52:14 22              (Jury in.)

02:52:14 23              THE COURT: Please be seated.

02:52:15 24              Plaintiff, call your next witness, please.

02:52:18 25              MS. TRUELOVE: Good afternoon, Your Honor. At

02:52:20 1 this time, we call Dr. Rebecca Reed-Arthurs.

02:52:22 2 THE COURT: All right. If you'll come forward and  
02:52:25 3 be sworn, please.

02:52:41 4 (Witness sworn.)

02:52:45 5 THE COURT: Please come around, have a seat at the  
02:52:50 6 witness stand.

02:52:51 7 All right. Counsel, you may proceed.

02:53:03 8 MS. TRUELOVE: Thank you, Your Honor.

02:53:03 9 REBECCA REED-ARTHURS, PH.D., PLAINTIFFS' WITNESS, SWORN

02:53:03 10 DIRECT EXAMINATION

02:53:04 11 BY MS. TRUELOVE:

02:53:04 12 Q. Good afternoon, Doctor. Would you please state your  
02:53:08 13 name for the record, and introduce yourself to the jury?

02:53:11 14 A. Good afternoon. My name is Rebecca Reed-Arthurs.

02:53:14 15 Q. Why are you here today, Dr. Reed-Arthurs?

02:53:16 16 A. I've designed and analyzed a survey to measure how much  
02:53:20 17 a change in LTE upload and download speed is worth to phone  
02:53:28 18 buyers and to Apple.

02:53:28 19 Q. What did you ultimately determine from the survey that  
02:53:31 20 you designed?

02:53:31 21 A. That consumers care about LTE upload and download  
02:53:36 22 speeds; and that it will affect their purchase decisions  
02:53:38 23 and ultimately Apple's profits.

02:53:38 24 Q. We're going to talk a lot at length about your survey,  
02:53:41 25 but before we do that, why don't you just tell the jury a

02:53:43 1 little bit about yourself.

02:53:45 2 A. So I live in Hayward, California with my husband. We  
02:53:49 3 were actually college sweethearts. We've been together for  
02:53:53 4 20 years, and married for seven. I'm an economist by  
02:53:55 5 trade. He and his brother run a small family business that  
02:53:59 6 sells auto parts and ATV parts. We love being outside and  
02:54:05 7 kayaking and hiking and watching my 22-month-old nephew  
02:54:11 8 grow up.

02:54:11 9 Q. What do you do for a living, Doctor?

02:54:13 10 A. So for the last 10 years, I've worked at Berkeley  
02:54:18 11 Research Group where I analyze economic issues, I calculate  
02:54:21 12 economic damages, and I design and analyze consumer surveys  
02:54:28 13 to measure the value of patented features like I'm doing  
02:54:32 14 today.

02:54:32 15 Q. Doctor, tell the jury a little about your educational  
02:54:36 16 background and your training in economics?

02:54:39 17 A. So I have a Bachelor's degree in economics from UC  
02:54:39 18 Berkeley and Masters and Ph.D. degrees in economics from UC  
02:54:42 19 Davis. There my fields of emphasis were industrial  
02:54:45 20 organization, which is just the study of how firms compete,  
02:54:49 21 and public economics, which relates to taxation,  
02:54:53 22 regulation, and public policy.

02:54:54 23 Q. What specific experience do you have with surveys?

02:54:58 24 A. I've designed and analyzed surveys myself. And while  
02:55:02 25 working with other economists, all told, I've spent

02:55:06 1 thousands of hours designing, analyzing, critiquing, and  
02:55:09 2 writing up my findings related to surveys.

02:55:13 3 Q. What are some examples of the types of surveys that  
02:55:15 4 you've designed or worked in connection with other people  
02:55:17 5 on?

02:55:17 6 A. So, recently, I designed a survey to measure the value  
02:55:24 7 of mobile payment technology in smartphones. I've also  
02:55:27 8 worked with renowned economists like Professor Jeffrey  
02:55:31 9 Prince, who is currently the chief economist for the FCC,  
02:55:34 10 to design surveys to measure the value of patented features  
02:55:37 11 in smartphones, like cellular technology, which is similar  
02:55:40 12 to what we're dealing with here.

02:55:41 13 Q. What other survey experience do you have?

02:55:46 14 A. Well, so my dissertation research included work  
02:55:50 15 related to issues of question framing. I have published on  
02:55:54 16 these surveys and on valuing intellectual property in the  
02:55:58 17 Handbook of Marketing Analytics and Intellectual Asset  
02:56:05 18 Management magazine. And I've testified in court as an  
02:56:09 19 expert on survey design and analysis.

02:56:09 20 Q. Are you being paid for your work on this case?

02:56:12 21 A. Berkeley Research Group is being paid \$550 an hour for  
02:56:17 22 my time.

02:56:17 23 Q. Have you ever worked on a case against Apple before?

02:56:19 24 A. This is the first time I'm testifying in a case  
02:56:22 25 against Apple, but I have worked on other Apple matters.

02:56:24 1 Q. How about PanOptis, have you worked for them before?

02:56:26 2 A. This is the first time I'm testifying on a case for  
02:56:30 3 PanOptis, but I have worked on other Optis matters.

02:56:33 4 Q. How many hours have you spent working on this case to  
02:56:37 5 date?

02:56:37 6 A. Approximately 300.

02:56:38 7 Q. Does what this jury ultimately decides have any  
02:56:41 8 bearing on whether or not you get compensated for your  
02:56:44 9 work?

02:56:44 10 A. No, not at all.

02:56:47 11 MS. TRUELOVE: Your Honor, at this time, we would  
02:56:49 12 offer Dr. Reed-Arthurs as an expert on surveys and  
02:56:53 13 economics.

02:56:53 14 THE COURT: Is there objection?

02:56:54 15 MS. SMITH: No objection, Your Honor.

02:56:55 16 THE COURT: All right. Then, without objection,  
02:56:57 17 the Court will recognize this witness as an expert in those  
02:57:02 18 designated fields.

02:57:02 19 Please proceed, Ms. Truelove.

02:57:05 20 MS. TRUELOVE: Thank you, Your Honor.

02:57:06 21 Q. (By Ms. Truelove) What kind of survey did you design  
02:57:09 22 for this case to measure how much consumers and Apple value  
02:57:14 23 improvement in LTE download and upload speeds?

02:57:15 24 A. I designed what's known as a choice-based conjoint, or  
02:57:15 25 a CBC, survey.

02:57:28 1 Q. What is a choice-based conjoint, or CBC, survey?

02:57:28 2 A. So in a CBC survey, you're essentially presenting the

02:57:28 3 survey taker with a group of products like a set of

02:57:30 4 smartphones that each vary based on different features like

02:57:33 5 brand and price and screen size and others, and then you

02:57:36 6 ask someone which one -- which phone from amongst the set

02:57:40 7 they are most likely to purchase.

02:57:42 8 Q. Why do you use the CBC survey?

02:57:44 9 A. CBC surveys are a standard in business and economics

02:57:47 10 because it allows us to measure how people trade off

02:57:50 11 amongst features when they're choosing products.

02:57:52 12 Q. Who uses these types of CBC surveys?

02:57:56 13 A. Major companies use CBC surveys to help design

02:58:01 14 products, and economists use CBC surveys to help develop

02:58:05 15 patented features.

02:58:06 16 Q. Are you aware or do you know whether Apple has ever

02:58:09 17 used a CBC survey to value patented features?

02:58:12 18 A. Yes, Professor John Hauser from MIT has performed CBC

02:58:18 19 surveys to measure consumer demands for patented features

02:58:22 20 for Apple.

02:58:23 21 Q. Why is it necessary to conduct a CBC survey when

02:58:27 22 trying to determine how much a particular feature is worth

02:58:30 23 in the marketplace?

02:58:32 24 A. So a CBC survey allows us to disentangle or measure

02:58:36 25 consumer willingness to pay for just one feature of a

02:58:38 1 product, as opposed to all the other features of the  
02:58:42 2 product.

02:58:42 3 Q. What do you mean by consumer willingness to pay?

02:58:46 4 THE COURT: Let me interrupt both of you for a  
02:58:48 5 minute. If you would both slow down just a little bit, I  
02:58:50 6 think it would be helpful to the jury, and I know it would  
02:58:53 7 be helpful to the Court. All right.

02:58:54 8 MS. TRUELOVE: Certainly, Your Honor, thank you.

02:58:55 9 THE COURT: Please restate your question.

02:58:58 10 Q. (By Ms. Truelove) What do you mean by consumer  
02:59:00 11 willingness to pay?

02:59:01 12 A. So consumer willingness to pay is just the maximum  
02:59:06 13 amount someone is willing to pay in dollars and cents for  
02:59:10 14 something.

02:59:10 15 Q. Why do you use a CBC survey to try and measure  
02:59:12 16 consumer willingness to pay and, in this instance, for LTE  
02:59:14 17 speed?

02:59:14 18 A. So when companies like Apple release products, they'll  
02:59:20 19 often vary a lot of features at the same time. So, for  
02:59:22 20 example, when they're changing LTE speeds, they might be  
02:59:25 21 changing screen size and processor power and other  
02:59:29 22 features. A CBC survey allows me to measure just the value  
02:59:32 23 of the change in LTE speeds, apart from these other  
02:59:36 24 changes.

02:59:36 25 Q. Can you walk us through an example as this relates to

02:59:39 1 Apple?

02:59:40 2 A. I can. So on this slide here, you can see Apple's  
02:59:44 3 pricing pattern for some of its smartphones over time. You  
02:59:47 4 can see that when it releases a new phone, it generally  
02:59:51 5 drops the price of the old phone instead of raising the  
02:59:55 6 price of the new phone.

02:59:56 7 For example, on the left-hand side here, you can  
02:59:59 8 see that when Apple released the iPhone 5, which had LTE,  
03:00:04 9 they dropped the price of the iPhone 4S, which did not have  
03:00:09 10 LTE, by a hundred dollars.

03:00:10 11 Q. What does the fact that Apple released the iPhone 5 at  
03:00:14 12 the same price as the 4S indicate, if anything, about the  
03:00:18 13 value of the improvement of LTE speed?

03:00:20 14 A. That doesn't indicate anything.

03:00:22 15 Q. Why?

03:00:22 16 A. Because it's important to compare phones and prices at  
03:00:27 17 the same period of time, that vertical line there, because  
03:00:33 18 the features available on the market and people's  
03:00:35 19 preferences for those features are going to change. The  
03:00:37 20 hundred dollars is a better comparison.

03:00:39 21 Q. Can you just look at that hundred dollars and use the  
03:00:43 22 difference in price to determine anything about willingness  
03:00:47 23 to pay?

03:00:48 24 A. No.

03:00:48 25 Q. Why not?

03:00:49 1 A. Because at the same time Apple added LTE, they've also  
03:00:53 2 changed other features like screen size and processor power  
03:00:57 3 and camera quality.

03:00:58 4 Q. So how does the CBC survey let you account for the  
03:01:03 5 change in multiple features that happen at the same time?

03:01:05 6 A. It essentially allows me to vary LTE speeds  
03:01:09 7 independently from these other features.

03:01:10 8 Q. Has -- has Apple done its own marketing surveys  
03:01:13 9 regarding consumer's opinions on the improvement of LTE  
03:01:19 10 speed?

03:01:19 11 A. Yes.

03:01:19 12 Q. Have you reviewed any of their surveys in connection  
03:01:23 13 with your work on this case?

03:01:24 14 A. I have.

03:01:25 15 MS. TRUELOVE: If we could look at PX-0374, the  
03:01:29 16 next slide.

03:01:30 17 Q. (By Ms. Truelove) Is this an example of the type of  
03:01:32 18 Apple survey that you reviewed?

03:01:34 19 A. It is, yes.

03:01:35 20 Q. And what do we see on this slide?

03:01:38 21 A. So on this slide, you can see that Apple surveyed  
03:01:41 22 iPhone 5 buyers about what particular features they found  
03:01:45 23 important. And we see that of people who wanted a  
03:01:49 24 particular feature, 56 percent wanted LTE support and 46  
03:01:53 25 percent wanted faster cellular connectivity.

03:01:55 1 Q. Can you use this survey to calculate willingness to  
03:01:58 2 pay for increased LTE speed?

03:02:00 3 A. No.

03:02:01 4 Q. Why not?

03:02:02 5 A. Because the way Apple structured the survey, you  
03:02:06 6 didn't have to make trade-offs between features and price.  
03:02:10 7 Everybody would love to have the best phone with the best  
03:02:13 8 features at the lowest price, but you rarely get it all.

03:02:17 9 Q. Why don't you just ask your survey takers or why  
03:02:21 10 doesn't Apple just ask in their marketing surveys how much  
03:02:23 11 somebody is willing to pay for a particular feature?

03:02:25 12 A. That approach is known as contingent valuation, and  
03:02:29 13 asking people what they'll pay for one feature at a time,  
03:02:34 14 has been shown to inflate the value. People will overstate  
03:02:36 15 how much they're willing to pay.

03:02:37 16 Q. Turning your attention to the survey that you designed  
03:02:41 17 in this case, can you explain to the jury the types of  
03:02:44 18 choices you created for your survey takers?

03:02:46 19 A. So this slide just shows an illustration of the type  
03:02:49 20 of choice set that a survey taker would have seen.

03:02:52 21 Q. What -- what are you trying to accomplish with what  
03:02:55 22 we're seeing here on this slide?

03:02:57 23 A. I'm trying to just very roughly re-create the  
03:03:01 24 experience of -- that someone would have if they, say,  
03:03:04 25 walked into the AT&T store in Marshall and wanted to

03:03:06 1 purchase a phone.

03:03:07 2 Q. How does this choice set that we're looking at on this  
03:03:10 3 slide replicate that shopping experience?

03:03:12 4 A. Well, you can see that we have several different  
03:03:14 5 phones, and they each vary based on price and other  
03:03:18 6 features. Someone walks into the store, they might see  
03:03:21 7 such phones and decide which one they want.

03:03:23 8 Q. Are there any standards for how these choices should  
03:03:28 9 look when you're designing a CBC survey?

03:03:31 10 A. There are.

03:03:31 11 Q. What are the standards for how these choices should  
03:03:35 12 look?

03:03:35 13 A. So a few things. First, generally, you'll find that  
03:03:40 14 CBC surveys have roughly six or seven features, and you'll  
03:03:44 15 ask the survey taker to hold all the other features  
03:03:48 16 constant.

03:03:48 17 For the features that you do include in the  
03:03:50 18 survey, those can vary and will take different levels,  
03:03:55 19 generally between 3 and 5, with price somewhat more.

03:03:58 20 Q. Why -- why do you only include a handful of product  
03:04:01 21 features when we know and we've heard throughout the trial  
03:04:04 22 that smartphones have dozens of features?

03:04:06 23 A. It's actually more reliable. If you include too many  
03:04:09 24 features, it's easy for the survey takers to get tired or  
03:04:14 25 fatigued or start taking shortcuts.

03:04:17 1 Q. So what features did you include in the survey that  
03:04:20 2 you designed?

03:04:20 3 A. So you can see on the left-hand side here, I included  
03:04:25 4 price, brand, screen size, camera resolution for the front  
03:04:28 5 and back of the cameras, LTE speed, both upload and  
03:04:33 6 download speed, storage, and battery life.

03:04:35 7 Q. And what levels did you allow these features to take?

03:04:37 8 A. The body of the table here shows examples of the range  
03:04:41 9 of levels that I used.

03:04:42 10 Q. Why did you choose those particular levels for the  
03:04:46 11 features that you used?

03:04:47 12 A. I selected them to span the levels that you might see  
03:04:51 13 in the real-world market and to represent not just Apple's  
03:04:55 14 products but also competing phone products and across  
03:04:59 15 the -- the time frame that's relevant in this case.

03:05:01 16 Q. Where did you find people to take your survey?

03:05:04 17 A. I reached out to an experienced firm called ProdegeMR  
03:05:09 18 to re-create the sample.

03:05:10 19 Q. And how many people ultimately took your survey?

03:05:14 20 A. 1512 people. And these are all people who have  
03:05:18 21 purchased a smartphone in the last seven years.

03:05:21 22 Q. Is this enough people to say something about  
03:05:24 23 smartphone owners in general?

03:05:25 24 A. Yes, absolutely.

03:05:26 25 Q. Why -- why is that?

03:05:27 1 A. It's very common in economics to use samples to draw  
03:05:33 2 conclusions about broader populations. So, for example,  
03:05:35 3 you might hear on the news consumer confidence numbers or  
03:05:39 4 unemployment statistics. Those are very often based on  
03:05:43 5 surveys.

03:05:43 6 Q. How did you ensure that your survey takers, the people  
03:05:46 7 that took your survey, would be representative of  
03:05:48 8 real-world smartphone purchasers?

03:05:51 9 A. So two things. First, ProdegeMR made sure that the  
03:05:57 10 people who started the survey matched the general  
03:05:59 11 demographic and regional distribution of people in the  
03:06:03 12 United States. And then once I had the completed surveys,  
03:06:06 13 I looked and made sure that the characteristics of the  
03:06:08 14 people who finished, matched what I know about smartphone  
03:06:11 15 owners in the U.S.

03:06:12 16 Q. What did each of the survey takers have to do for your  
03:06:15 17 survey?

03:06:17 18 A. So, first, someone had to answer some basic background  
03:06:20 19 questions, and then review descriptions of each of the  
03:06:23 20 different features that I included in the survey.

03:06:25 21 Q. What did they do next?

03:06:27 22 A. Next they had to answer 10 different questions where  
03:06:34 23 within each question, they had to choose from amongst four  
03:06:37 24 different phones.

03:06:42 25 Q. Do you have or how did the choice set look in your

03:06:44 1 survey?

03:06:45 2 A. This next slide is an image of the actual choice set

03:06:49 3 that I would have included in the survey.

03:06:50 4 Q. So remind -- remind us, if you would, what it is you're

03:06:55 5 asking your survey takers to do as they work through this

03:06:59 6 question?

03:06:59 7 A. So, first, I asked them to think back to when they

03:07:02 8 purchased the last phone, and then review these phones

03:07:05 9 here. And holding everything else identical, so

03:07:09 10 anything -- any feature that's not included here constant,

03:07:12 11 choose which phone they like the best or they would be most

03:07:15 12 likely to purchase.

03:07:16 13 Q. And each of the 1512 people who took your survey

03:07:20 14 answered 10 questions?

03:07:22 15 A. Yes.

03:07:22 16 Q. Okay. Were the four choices included in each of the 10

03:07:27 17 questions the same for every person who took your survey?

03:07:29 18 A. No, they were not.

03:07:30 19 Q. Why not?

03:07:31 20 A. It's very standard conjoint methodology to create

03:07:36 21 thousands of different combinations of feature levels. By

03:07:40 22 using a lot of different levels, you can actually create

03:07:43 23 more precise estimates.

03:07:45 24 Q. Is it necessary that you create feature combinations

03:07:49 25 that correspond or actually mimic actual phones that you

03:07:54 1 could go out and purchase on the marketplace?

03:07:56 2 A. No, it's not.

03:07:57 3 Q. Why not?

03:07:58 4 A. Because the whole point of doing the surveys -- because

03:08:01 5 oftentimes smartphone makers will vary features in lockstep

03:08:05 6 with one another. By doing the survey, I can change and

03:08:09 7 move LTE speeds independently from these other features.

03:08:11 8 Q. Did you do anything to ensure that your survey takers

03:08:16 9 understood the seven features presented to them?

03:08:19 10 A. I did.

03:08:19 11 Q. What did you do?

03:08:21 12 A. So, first, everybody reviewed a description of each of

03:08:26 13 the features that was included in the survey.

03:08:27 14 Q. You're not a technical expert, correct?

03:08:29 15 A. No, I'm not.

03:08:30 16 Q. So to the extent that you needed input on technical

03:08:34 17 aspects of the feature descriptions that you created for

03:08:37 18 your survey, where did you get that from?

03:08:39 19 A. I relied on Professors Madisetti and Mahon.

03:08:45 20 Q. Can you show the jury an example of the LTE feature

03:08:48 21 description that you included in the survey?

03:08:50 22 A. Yes. This next slide here shows the LTE description.

03:08:53 23 Q. In walking through PX-2821, what did you do to ensure

03:09:00 24 that your survey takers understood you were talking about

03:09:04 25 LTE speed, as opposed to WiFi or any other cellular speed?

03:09:08 1 A. So I started by introducing LTE speed, and then I made  
03:09:13 2 it clear that we're talking just about LTE and not to WiFi,  
03:09:22 3 2G, 3G, or 5G. And then I explained what an upload speed  
03:09:28 4 or download speed meant, and then provided examples that  
03:09:31 5 help people translate their real-world experience in terms  
03:09:35 6 of how long it takes to either upload a file, a photo to  
03:09:40 7 Facebook, or to download a hundred megabyte file to their  
03:09:43 8 phone, how long that actually takes at different LTE  
03:09:46 9 speeds.

03:09:47 10 Q. Other than the technical input that you received, what  
03:09:52 11 did you consider as you were designing this description  
03:09:54 12 here for LTE upload and download speed?

03:09:57 13 A. I started by reviewing Apple's marketing materials.  
03:10:02 14 And so on this slide, for example, you can see Apple was  
03:10:07 15 describing LTE as -- in kind of generic marketing terms.  
03:10:13 16 So, for example, ultra-fast wireless and blazing-fast  
03:10:18 17 speeds.

03:10:18 18 Q. Did you have an opportunity to review any materials  
03:10:20 19 from Apple that provided a more specific description of LTE  
03:10:24 20 speed?

03:10:24 21 A. I did. So sometimes Apple will use the maximum  
03:10:32 22 theoretical speed that a phone can go. So here you can see  
03:10:36 23 up to 150 Mbps. And on this next slide, you can see up to  
03:10:43 24 450 Mbps.

03:10:46 25 However, in the real world, phones rarely ever

03:10:49 1 achieve those speeds.

03:10:51 2 Q. Did you look at anything else other than Apple  
03:10:54 3 marketing materials to inform how you created your  
03:10:58 4 description for LTE upload and download speed?

03:11:01 5 A. I did, yes.

03:11:01 6 Q. What was that?

03:11:02 7 A. So I also looked at third-party review sites. And  
03:11:06 8 they also emphasized LTE speeds. However, instead of using  
03:11:10 9 the maximum speeds, they tended to actually do tests to see  
03:11:15 10 how fast these phones went in the real world. So, for  
03:11:19 11 example, on this next slide, you can see Apple's actual  
03:11:24 12 achieved LTE speeds in iPhones.

03:11:27 13 Q. What did you conclude from the review of -- of the  
03:11:30 14 materials that you've just walked through with the jury?

03:11:32 15 A. Two things. First, that both Apple and third-party  
03:11:37 16 reviewers think that LTE speeds are relevant to people's  
03:11:40 17 purchase decisions.

03:11:42 18                 And, second, that it was going to be better to  
03:11:45 19 create an LTE description that was centered around average  
03:11:50 20 experience speeds that people see in the real world, as  
03:11:54 21 opposed to Apple's theoretical maximums.

03:11:58 22 Q. Did you leave it at that, or did you do anything else  
03:12:01 23 to ensure that those seven descriptions that you provided  
03:12:04 24 for the features you included would be easily understood by  
03:12:06 25 your survey takers?

03:12:07 1 A. I did.

03:12:08 2 Q. What did you do?

03:12:08 3 A. I conducted what's known as a focus group, which

03:12:13 4 basically means I brought in a small group of people and

03:12:17 5 had them take a paper version of my survey. And then we

03:12:19 6 talked about how they interpreted each of the features and

03:12:21 7 whether or not anything could be clearer or was

03:12:23 8 misunderstood.

03:12:24 9 Q. What was the feedback that you got back from your

03:12:27 10 focus group?

03:12:28 11 A. Generally, that the feature descriptions were clear,

03:12:32 12 and that the LTE example was very helpful.

03:12:35 13 Q. Do your survey takers need to understand what the LTE

03:12:41 14 speed is on their phone at any given time in order to be

03:12:43 15 able to take your survey?

03:12:44 16 A. No, they do not.

03:12:45 17 Q. Why not?

03:12:46 18 A. Well, so a couple of things. First, I included the

03:12:49 19 example to help people add context to the real-world

03:12:52 20 experiences. But also if you know that LTE speed isn't

03:12:57 21 really relevant to you, you're free to ignore the feature.

03:13:00 22 And if you know that you're frequently bothered by your LTE

03:13:04 23 speeds, you can just choose the fastest. That's fine.

03:13:08 24 Q. Don't -- don't people download a lot over WiFi? How

03:13:11 25 did you -- how did you account for that in your survey that

03:13:14 1 you designed?

03:13:16 2 A. Well, so some people will download over WiFi a lot.

03:13:19 3 Some people less so. And it's going to depend on the  
03:13:22 4 person. They're going to know their usage patterns better  
03:13:27 5 than I can, which is why I made it clear in my description  
03:13:29 6 that it just relates to LTE speed and not to other  
03:13:32 7 standards. And I reminded people of that later in the  
03:13:36 8 survey.

03:13:36 9 Q. How do the survey takers' choices tell you anything  
03:13:40 10 about willingness to pay?

03:13:42 11 A. So this next slide illustrates -- provides a basic  
03:13:46 12 example. So here we have two phones that are identical,  
03:13:50 13 except for screen size and price.

03:13:54 14 Now, if someone chooses Phone A, that means  
03:13:56 15 they're willing to pay at least \$200.00 -- that's the  
03:13:59 16 difference in the prices -- to go from a four-inch screen  
03:14:03 17 to a 5.5-inch screen.

03:14:05 18 Q. So at the conclusion of your survey, you have 10  
03:14:08 19 choices made by 15 -- 1512 people. What do you do with  
03:14:12 20 that information?

03:14:13 21 A. So I can take all of those data points, and they each  
03:14:19 22 contain comparisons kind of like this, and I can load that  
03:14:24 23 data into a computer, and then using very standard economic  
03:14:28 24 and statistical approaches, I can calculate an equation  
03:14:30 25 that relates the phone that people chose to their prices

03:14:34 1 and the features of the phone.

03:14:35 2 Q. Now, are you doing all these calculations yourself?

03:14:38 3 A. No.

03:14:39 4 Q. What -- what's doing the calculations for you?

03:14:41 5 A. A computer. And, in particular, a certain statistical

03:14:45 6 software.

03:14:45 7 Q. Can you walk the jury through how the choices your

03:14:51 8 survey takers made are being processed by the computer with

03:14:54 9 the statistical software?

03:14:56 10 A. This next slide shows a simplified example.

03:15:02 11 So you can see that each of these dots -- you can  
03:15:05 12 think of that as representing someone's phone choice. What  
03:15:08 13 the computer is doing is trying to find the line or  
03:15:11 14 equation that best fits this data. You can see here on the  
03:15:16 15 screen in a moment that these red and green lines don't fit  
03:15:19 16 very well.

03:15:19 17 What the computer is doing is searching for the  
03:15:22 18 blue line that goes right through these data points. Once  
03:15:25 19 we have that, we have the equation that we can use to  
03:15:28 20 calculate willingness to pay.

03:15:31 21 However, what the computer is doing is actually  
03:15:33 22 much more complicated because it's also controlling for  
03:15:37 23 other phone features at the same time.

03:15:40 24 Q. What did you find when you applied this methodology to  
03:15:43 25 the patents in this case?

03:15:44 1 A. So, for example, we heard earlier today from Professor  
03:15:50 2 Madisetti that the '833 patent was associated with a  
03:15:54 3 10.7 percent change in download speed.

03:15:56 4 Using this same general approach, I was able to  
03:15:59 5 calculate that that percentage change in download speed  
03:16:03 6 translates into a change of \$6.03 in willingness to pay.

03:16:08 7 Q. How do you know that all 1512 people who took your  
03:16:12 8 survey took it seriously?

03:16:15 9 A. Well, so occasionally people don't take it quite as  
03:16:20 10 seriously as we'd like.

03:16:21 11 So I went through all of the data and I removed  
03:16:24 12 people who either sped through the survey, who were  
03:16:29 13 interrupted in the middle, who failed to answer basic data  
03:16:29 14 quality checks correctly and who answered all As or all Bs  
03:16:34 15 or all Cs.

03:16:37 16 Once I dropped those people, I have what I like to  
03:16:39 17 call my baseline sample, and that dropped willingness to  
03:16:43 18 pay by a few cents.

03:16:45 19 Q. So you reran your analysis once you dropped those  
03:16:49 20 people?

03:16:51 21 A. I did, yes.

03:16:51 22 Q. Once you had your baseline sample, did you do any  
03:16:51 23 further analysis?

03:16:51 24 A. Yes, I did.

03:16:51 25 Q. What was the first thing that you looked at?

03:16:53 1 A. Well, so, first, we've been talking so far about the  
03:16:57 2 willingness to pay of the average consumer. But if you're  
03:17:00 3 going to calculate a change in profit, you need to focus in  
03:17:03 4 on what's known as the marginal consumer.

03:17:07 5 Q. What's the marginal consumer?

03:17:08 6 A. A marginal consumer is just someone who is right on the  
03:17:13 7 fence between choosing the phone that they actually  
03:17:15 8 purchased versus choosing some other device or not buying a  
03:17:18 9 device at all.

03:17:19 10 Those people are going to be more relevant to  
03:17:23 11 Apple and other smartphone sellers' pricing decisions  
03:17:28 12 because they're more likely to respond based on small  
03:17:32 13 changes in price or feature sets.

03:17:33 14 Q. How did you determine who those marginal consumers were  
03:17:37 15 in your survey?

03:17:38 16 A. So I just asked people to think back to when they  
03:17:42 17 purchased their last device and whether or not they still  
03:17:45 18 would have bought the same phone if it had been priced  
03:17:49 19 10 percent higher. If they said no or maybe, they're more  
03:17:53 20 likely to be the marginal consumers.

03:17:53 21 Q. So what did you do with that marginal consumer  
03:17:56 22 information once you had it?

03:17:57 23 A. I reran my analysis again, and that dropped willingness  
03:18:02 24 to pay a little bit further.

03:18:02 25 Q. Is there any way you can check your survey results

03:18:07 1 against real-world market prices?

03:18:09 2 A. In this case, yes.

03:18:10 3 Q. And how do you do that?

03:18:11 4 A. So Apple and Samsung actually price storage

03:18:17 5 independently from other features. You can just pay for an

03:18:22 6 upgrade in storage. And, on average, they charge almost

03:18:24 7 \$82 to double the storage in your phone.

03:18:27 8 Q. How does that let you check your survey against those

03:18:30 9 real-world market prices for storage?

03:18:32 10 A. I also included storage in my survey. And I found that

03:18:35 11 people were willing to pay just under a hundred dollars to

03:18:39 12 double the price of storage.

03:18:40 13 So my survey results were actually quite close to

03:18:43 14 Apple's real-world market pricing.

03:18:45 15 Q. Did you make any adjustments to your survey results

03:18:48 16 based on this analysis?

03:18:49 17 A. I did.

03:18:50 18 Q. What did you do?

03:18:51 19 A. So I calculated basically the ratio between those two

03:18:55 20 values, and then I used that to scale down my willingness

03:18:59 21 to pay for LTE.

03:19:00 22 Q. Did you make any other adjustments to willingness to

03:19:04 23 pay?

03:19:04 24 A. One more.

03:19:04 25 Q. What was that?

03:19:05 1 A. Apple generally will sell its phones to places like  
03:19:10 2 Verizon or AT&T at a discount. So I also applied that  
03:19:14 3 discount to the willingness to pay number.

03:19:16 4 Q. Do you have a slide that summarizes all the adjustments  
03:19:18 5 you made to that initial willingness to pay number of  
03:19:23 6 \$6.03?

03:19:23 7 A. I do. This is the slide.

03:19:24 8 Q. And -- and, in summary, what was your -- what did you  
03:19:28 9 conclude the willingness would be to pay for the LTE speed,  
03:19:32 10 increase in speed, upload and download, after you took out  
03:19:36 11 all the adjustments?

03:19:37 12 A. So continuing with our example for the '833 patent,  
03:19:41 13 that original \$6.03 translates into \$3.98 in willingness to  
03:19:47 14 pay.

03:19:47 15 Q. So is this the amount of consumer willingness to pay  
03:19:50 16 available for Apple to capture?

03:19:51 17 A. This is still will -- willingness to pay but not  
03:19:57 18 profit.

03:19:57 19 Q. So how do you go about calculating a change in profit?

03:20:01 20 A. I started by analyzing Apple's actual financial data,  
03:20:04 21 its revenue, and its costs. And I also analyzed the  
03:20:09 22 structure of the smartphone market and how Apple competes  
03:20:13 23 in that market.

03:20:14 24 I found that they offer a different iated product,  
03:20:20 25 which basically means their phones aren't perfect

03:20:22 1 substitutes from other phones and that they're able to  
03:20:25 2 price with market power, which basically just translates  
03:20:28 3 into them having a downward sloping demand curve.

03:20:33 4 I used all of that information to choose a  
03:20:35 5 standard microeconomic model to convert a change in  
03:20:36 6 willingness to pay into a change in profit.

03:20:38 7 Q. Can you walk us through the model that you used to  
03:20:41 8 calculate the change in Apple's profits?

03:20:45 9 A. Yes. This is on the next slide.

03:20:48 10 Q. Go ahead and -- and walk the jury through what's going  
03:20:51 11 on here?

03:20:52 12 A. Sure. So if you ignore the red lines for a second and  
03:20:56 13 just focus on the blue lines, we have the line labeled D.  
03:21:01 14 That's what's known as an inverse demand curve. And  
03:21:05 15 essentially that kind of reflects the distribution of  
03:21:08 16 people's willingness to pay on the market.

03:21:10 17 The MR line there is marginal revenue. That's how  
03:21:14 18 much revenue Apple gets from selling one more phone. The  
03:21:17 19 MC line is what's known as marginal costs. That's how much  
03:21:21 20 an extra phone costs Apple to make. And the blue rectangle  
03:21:25 21 there is Apple's profits.

03:21:28 22 Q. How does this let you calculate a change in Apple's  
03:21:31 23 profits?

03:21:32 24 A. So a change in willingness to pay is essentially the  
03:21:35 25 same thing as a shift downward in the demand curve. I can

03:21:40 1 use these shifts in Apple's financial data to calculate  
03:21:44 2 their new profit margin. You can see in a moment that --  
03:21:49 3 it's that smaller red rectangle there. And then I look at  
03:21:53 4 the difference in its profits to calculate a change in  
03:21:56 5 profit.

03:21:56 6 So, here, you'll have our original \$3.98 in  
03:22:02 7 willingness to pay translated into \$3.97 in Apple's change  
03:22:06 8 in profit.

03:22:07 9 Q. Did you do this same analysis for each of the  
03:22:11 10 percentage changes in LTE download and upload speed for all  
03:22:16 11 the patented technology in this case?

03:22:17 12 A. I did.

03:22:17 13 Q. And what were your results?

03:22:19 14 A. So the results are summarized on this slide. So, for  
03:22:23 15 example, you can see the '833 patent at the top is  
03:22:27 16 associated with a change in Apple's profits of \$3.97 per  
03:22:32 17 iPhone.

03:22:32 18 Q. And are these the same improvements in LTE speeds that  
03:22:35 19 we heard Professors Madisetti and Mahon testify to over the  
03:22:41 20 last two days?

03:22:42 21 A. They are.

03:22:43 22 Q. Did you stop there, or did you perform any checks on  
03:22:45 23 the role -- the end results that we see here on this slide?

03:22:49 24 A. I performed two checks.

03:22:51 25 Q. And what checks did you perform?

03:22:53 1 A. First, I reviewed a study by Professor Prince who had  
03:22:59 2 looked at willingness to pay for change in cellular speeds  
03:23:02 3 in 2013. His results were more than double mine, so I  
03:23:07 4 concluded that my results are likely conservative.

03:23:12 5 Q. And did you look at any other studies to check your  
03:23:13 6 results?

03:23:13 7 A. I did. There's a paper written by Doctors Sidak and  
03:23:19 8 Skog who analyzed market data on cell phones sold in the  
03:23:21 9 United States -- smartphones sold in the United States in  
03:23:23 10 2018.

03:23:24 11 Q. And how did that Sidak and Skog paper inform your  
03:23:31 12 confidence in your results?

03:23:32 13 A. So, as I mentioned before, using market data can be  
03:23:34 14 tricky, but their analysis, in my opinion, was sound. And  
03:23:38 15 they found that a change in LTE speeds of 10.7 percent, the  
03:23:45 16 results implied a change of roughly \$5.00 in the wholesale  
03:23:49 17 price of a phone. So, again, my results are conservative.

03:23:52 18 Q. So, in conclusion, Dr. Reed-Arthurs, can you tell this  
03:23:56 19 jury what your opinion is regarding the change in Apple's  
03:23:58 20 profits from the patented technology?

03:24:00 21 A. Yes. So the '833 patent is associated with a change in  
03:24:05 22 Apple's profits of \$3.97. The '332 patent is associated  
03:24:10 23 with a change of \$1 .66. The '774 patent is associated  
03:24:17 24 with a change of \$3.04. The '557 patent is associated with  
03:24:22 25 a change of 5 cents. And the '284 patent is associated

03:24:27 1 with a change of 7 cents.

03:24:29 2 Q. Thank you, Doctor.

03:24:30 3 MS. TRUELOVE: I'll pass the witness.

03:24:31 4 THE COURT: Cross-examination by the Defendant?

03:25:00 5 You may proceed.

03:25:01 6 MS. SMITH: Thank you, Your Honor.

03:25:01 7 CROSS-EXAMINATION

03:25:02 8 BY MS. SMITH:

03:25:02 9 Q. Good afternoon, Dr. Reed-Arthurs?

03:25:10 10 A. Good afternoon.

03:25:10 11 Q. My name is Melissa Smith, and I represent Apple. It's

03:25:14 12 nice to meet you?

03:25:15 13 A. It's nice to meet you, too.

03:25:17 14 Q. Now, Doctor, this is not the first case that you've

03:25:20 15 worked on, you said, against Apple; is that correct?

03:25:22 16 A. Yes, it is.

03:25:24 17 Q. You've actually spent a fair amount of time working on

03:25:28 18 cases opposite Apple?

03:25:29 19 A. I have.

03:25:30 20 Q. And your firm, Berkeley Research Group, and you have

03:25:34 21 billed -- billed more than \$2 million on work against Apple

03:25:38 22 in the last five years; is that correct?

03:25:40 23 A. That sounds approximately correct.

03:25:43 24 Q. Now, in this case, you're not offering an opinion on

03:25:49 25 whether or not the patents-in-suit are valid or infringed,

03:25:52 1 are you?

03:25:52 2 A. No.

03:25:53 3 Q. You're not offering an opinion on any claimed technical

03:25:57 4 benefit enabled by the patents-in-suit, correct?

03:26:00 5 A. No, I'm relying on the technical experts.

03:26:03 6 Q. And you understand that if the patent-in-suit -- if the

03:26:08 7 patents-in-suit are not infringed, that Apple would owe no

03:26:10 8 damages, correct?

03:26:11 9 A. That is consistent with my understanding of the law.

03:26:16 10 Q. You're not here to offer an opinion on what the parties

03:26:18 11 would have agreed to during a hypothetical negotiation?

03:26:22 12 A. No.

03:26:23 13 Q. And you're not offering an opinion on which of the

03:26:27 14 party's licenses are comparable, are you?

03:26:30 15 A. No.

03:26:30 16 Q. You actually didn't even review any licenses in forming

03:26:34 17 your opinions, did you?

03:26:35 18 A. No, I did not.

03:26:36 19 Q. Your opinions are premised on the assumption that the

03:26:40 20 patents-in-suit enable an increase in LTE upload and

03:26:44 21 download speeds, correct?

03:26:47 22 A. Yes.

03:26:48 23 Q. You don't have an engineering degree?

03:26:50 24 A. No.

03:26:52 25 Q. And you're not a technical expert in cellular

03:26:55 1 technology?

03:26:56 2 A. That is correct.

03:26:57 3 Q. Not an expert in baseband processors?

03:26:59 4 A. No.

03:27:00 5 Q. And you haven't undertaken any type of investigation of

03:27:05 6 the technical details of the patents-in-suit?

03:27:07 7 A. No.

03:27:07 8 Q. So you relied upon Dr. Madisetti and Dr. Mahon's

03:27:14 9 opinions that the patents-in-suit enable an increase in LTE

03:27:18 10 upload and download speeds relative to the next best

03:27:21 11 alternative?

03:27:22 12 A. Yes.

03:27:23 13 Q. And you don't present any calculations of profit

03:27:28 14 attributable -- attributable to the patents-in-suit that

03:27:32 15 don't depend on Dr. Madisetti's and Dr. Mahon's opinions,

03:27:37 16 correct?

03:27:37 17 A. That is correct.

03:27:40 18 Q. And you didn't independently determine the best -- the

03:27:45 19 next best alternative to the patents-in-suit, correct?

03:27:49 20 A. No, I didn't.

03:27:50 21 Q. So, if the technical experts, Dr. Madisetti and

03:28:03 22 Dr. Mahon, are wrong about the percentage change in LTE in

03:28:08 23 that upload or download speed, then your conclusions would

03:28:10 24 also have to change, correct?

03:28:12 25 A. Yes, that's fair.

03:28:13 1 Q. And if Dr. Mahon's and Dr. Madisetti's calculation of  
03:28:18 2 the benefits are off, then your calculation of the benefit  
03:28:21 3 associated with the patents wouldn't hold either, would it?  
03:28:24 4 A. Yes, if they're off.  
03:28:28 5 Q. And if Dr. Mahon and Dr. Madisetti's speed calculations  
03:28:32 6 are off, then your final conclusions would also be  
03:28:36 7 incorrect?  
03:28:36 8 A. When you say speed calculations, could you clarify?  
03:28:40 9 Q. The calculations that Dr. Mahon -- were you in the --  
03:28:43 10 were you in the room when Dr. Mahon and Dr. Madisetti  
03:28:47 11 testified?  
03:28:48 12 A. Yes.  
03:28:48 13 Q. The -- the speed calculations they did on up -- on  
03:28:51 14 upload and download, you didn't do those calculations on  
03:28:54 15 your own?  
03:28:55 16 A. The change in speeds, no, I did not.  
03:28:57 17 Q. Okay. Thank you.  
03:28:59 18 If the patents-in-suit don't provide upload or  
03:29:03 19 download speed benefits, then that willingness to pay that  
03:29:07 20 you calculated would be zero?  
03:29:11 21 A. Yes. For those features, yes.  
03:29:13 22 Q. And the profits that you calculated would be zero?  
03:29:17 23 A. If there are no speed benefits, then that is true.  
03:29:20 24 Q. And the damages based on your survey would be zero,  
03:29:24 25 correct?

03:29:24 1 A. I don't have an opinion on that.

03:29:26 2 Q. Now, Doctor, at least -- I think about a quarter of

03:29:35 3 your work at Berkeley Research Group is actually outside

03:29:38 4 the courtroom or outside the context of litigation, isn't

03:29:41 5 it?

03:29:41 6 A. That sounds right.

03:29:43 7 Q. Okay. And outside the courtroom, outside the context

03:29:46 8 of litigation, you've done some valuation of intellectual

03:29:49 9 property, haven't you?

03:29:50 10 A. Yes, that's fair.

03:29:54 11 Q. All your work is not in litigation, correct?

03:29:56 12 A. No, it's not.

03:29:57 13 Q. And when you valued intellectual property outside the

03:30:01 14 courthouse, you've actually looked at comparable

03:30:05 15 technology, haven't you?

03:30:05 16 A. Yes, that is one thing that we review sometimes.

03:30:10 17 Q. And by that, I mean that would include licenses to

03:30:13 18 technology that was broadly similar to the technology that

03:30:17 19 you're valuing, correct?

03:30:19 20 A. Yes. Sometimes we do look at licenses, if we can find

03:30:22 21 them, that are sufficiently comparable.

03:30:24 22 Q. And you agree that considering licensing -- licensed

03:30:31 23 royalty rate for a sufficiently close comparable, it's an

03:30:34 24 accepted way to value intellectual property, correct?

03:30:36 25 A. If it is close enough, yes.

03:30:38 1 Q. And you said you yourself, you -- you do it -- you use  
03:30:42 2 licenses?

03:30:42 3 A. I have used licenses in the past.

03:30:46 4 Q. And that's because it provides a -- a benchmark, if you  
03:30:49 5 will, for what third parties are willing to pay for  
03:30:53 6 something similar; is that right?

03:30:57 7 A. Yes.

03:31:01 8 Q. So outside the context of the courthouse in litigation,  
03:31:06 9 you've looked at comparables to value intellectual  
03:31:09 10 property?

03:31:09 11 A. Yes, when I can find sufficient comparable licenses.

03:31:13 12 Q. But, in this case, you didn't even review a single  
03:31:18 13 license in trying to value the patents-in-suit, did you?

03:31:20 14 A. No, that wasn't part of my analysis.

03:31:25 15 Q. Instead, you performed what's called a choice-based  
03:31:31 16 conjoint survey, that you discussed with Ms. Truelove; is  
03:31:33 17 that right?

03:31:33 18 A. It is.

03:31:34 19 Q. And that's actually something that you've never used to  
03:31:40 20 value intellectual property outside the context of this --  
03:31:42 21 a courthouse, correct?

03:31:45 22 A. I don't think outside of litigation. It's very common,  
03:31:48 23 but I haven't myself used it.

03:31:51 24 Q. And, here, your conjoint survey is designed to measure  
03:31:57 25 the value of improvements in LTE speed, correct?

03:32:00 1 A. Yes, it is.

03:32:00 2 Q. Now, the first thing you did, you conducted a survey of

03:32:07 3 smartphone purchasers, right?

03:32:09 4 A. Yes.

03:32:09 5 Q. Okay. The survey presented the smartphone purchasers

03:32:12 6 with a set of hypothetical products with various features,

03:32:17 7 correct?

03:32:17 8 A. Yes.

03:32:17 9 Q. And you didn't present specific model numbers --

03:32:26 10 specific model numbers to the purchasers, did you?

03:32:29 11 A. No.

03:32:29 12 Q. So your survey, for instance, didn't include an iPhone

03:32:33 13 5 with all the features that would be present in an iPhone

03:32:36 14 5?

03:32:36 15 A. Yeah, you can't list all of the features in a phone.

03:32:40 16 There would be too many.

03:32:42 17 Q. The purchasers were presented with options where

03:32:45 18 there's actually no identical phone in the -- I believe you

03:32:51 19 and Ms. Truelove were discussing the real world; is that

03:32:55 20 correct?

03:32:55 21 A. Sorry?

03:32:55 22 Q. Sure. The purchasers in the survey were presented with

03:33:00 23 -- with -- with options where there's no identical phone

03:33:04 24 that appears in the actual -- the real -- the real-world

03:33:08 25 market, correct?

03:33:09 1 A. Yes, there will be options that aren't identical to  
03:33:12 2 phones in the real world.

03:33:13 3 Q. Well, for example, let's take storage size. You  
03:33:16 4 presented options of 32, 64, 128, and 256 gigabytes,  
03:33:23 5 correct?

03:33:23 6 A. I did, yes.

03:33:24 7 Q. Okay. But -- but -- but you're aware, Doctor, that,  
03:33:29 8 for example, Apple didn't even offer a 20 -- 256 gigabyte  
03:33:33 9 iPhone during several of the years covered by your survey?

03:33:37 10 A. That is correct. I was spanning the entire time frame.

03:33:41 11 Q. Okay. And your survey actually included an iPhone for  
03:33:44 12 \$199.00, didn't it?

03:33:46 13 A. Yes, it does.

03:33:49 14 Q. And you agree that there's not an iPhone offered for a  
03:33:51 15 price of \$199.00 during the relevant time period, correct?

03:33:56 16 A. Yes, that is likely.

03:33:57 17 Q. But your survey nonetheless included an iPhone at the  
03:34:02 18 cost of \$199.00?

03:34:05 19 A. Yes.

03:34:05 20 Q. Now, you intentionally didn't create combinations that  
03:34:16 21 reflected specific real-world products, correct?

03:34:18 22 A. Yes. I included additional variation, that is correct.

03:34:23 23 Q. Okay. And based on the survey results, the ones -- the  
03:34:30 24 survey results regarding those hypothetical products, you  
03:34:33 25 calculated a willingness to pay for average LTE upload and

03:34:37 1 download speed, correct?

03:34:38 2 A. Yes.

03:34:38 3 Q. And that willingness to pay that you calculated, it

03:34:43 4 wasn't related in any way to Apple's real-world or actual

03:34:47 5 sales data, was it?

03:34:48 6 A. I wouldn't agree with that.

03:34:51 7 Q. Well, you certainly didn't base your willingness to pay

03:35:03 8 calculation on any internal Apple pricing strategy

03:35:07 9 documents, did you?

03:35:08 10 A. That is true.

03:35:12 11 Q. Now, after calculating the willingness to pay, you

03:35:23 12 assumed that Apple would adjust their prices optimally,

03:35:28 13 correct?

03:35:28 14 A. I did use a profit maximizing model, which, yes, that

03:35:35 15 is part of that.

03:35:36 16 Q. Okay. But -- but you actually thought you had

03:35:38 17 insufficient -- insufficient information to separate

03:35:41 18 changes in LTA -- LTE speed from the features of Apple's

03:35:46 19 products, correct?

03:35:46 20 A. Specifically, using only Apple's data on its iPhones,

03:35:50 21 yes, that is correct.

03:35:51 22 Q. And then the next step you calculated the change in

03:35:55 23 profit resulting from your willingness to pay calculation,

03:35:57 24 correct?

03:35:57 25 A. Yes.

03:35:59 1 Q. Okay. And in doing that calculation, you didn't cite  
03:36:02 2 any statements from any Apple employees that an increase in  
03:36:08 3 price will actually result in a decrease in volume for  
03:36:12 4 iPhones, did you?

03:36:12 5 A. No, I didn't state anything for that.

03:36:15 6 Q. And you didn't cite any articles saying that an  
03:36:19 7 increase in price will result in a decrease in volume for  
03:36:23 8 iPhones, did you?

03:36:24 9 A. No, I didn't cite articles that they obeyed the law of  
03:36:32 10 demand.

03:36:33 11 Q. Now, in conducting your survey, you instructed people  
03:36:36 12 to assume that each option they saw was exactly the same as  
03:36:40 13 their current smartphone, correct?

03:36:42 14 A. Yes, that is correct, with the exception of the  
03:36:48 15 features that varied.

03:36:49 16 MS. SMITH: Your Honor, I'm going to move to  
03:36:51 17 strike the last part of her answer, please.

03:36:53 18 THE COURT: All right. I'll grant that objection  
03:37:20 19 and strike the answer after, "yes, that is correct." The  
03:37:25 20 remainder of it will be struck.

03:37:27 21 MS. SMITH: Thank you, Your Honor.

03:37:29 22 Q. (By Ms. Smith) But not all smartphones have the same  
03:37:32 23 features in the real world, correct?

03:37:33 24 A. Yes, that is true.

03:37:35 25 Q. For example, an iPhone uses iOS software, right?

03:37:40 1 A. It does.

03:37:40 2 Q. And no other smartphone manufacturers uses iOS -- iOS

03:37:46 3 software?

03:37:47 4 A. That's true.

03:37:47 5 Q. Other phone manufacturers might include features that

03:37:50 6 Apple products don't have, correct?

03:37:53 7 A. Yes.

03:37:54 8 Q. Samsung might include some differentiating feature in

03:37:59 9 the products that are not in Apple's products?

03:38:00 10 A. That is correct.

03:38:01 11 Q. But if those survey products don't actually include the

03:38:05 12 features in the person's current -- current phone, that

03:38:09 13 assumption -- it wouldn't be consistent with reality,

03:38:11 14 correct?

03:38:11 15 A. That is potential -- there is potential for that, yes.

03:38:14 16 Q. Now, on that note, you -- you conducted the -- a focus

03:38:20 17 group that you visited with Ms. Truelove about before

03:38:23 18 conducting the survey, correct?

03:38:24 19 A. I did.

03:38:24 20 Q. And the focus group, as you said, is where you have

03:38:28 21 real people take the survey to understand how they're

03:38:31 22 interpreting the different questions, correct?

03:38:33 23 A. Yes.

03:38:35 24 Q. And you use a focus group to identify potential

03:38:39 25 problems in your survey, correct?

03:38:41 1 A. I do.

03:38:43 2 Q. Here your focus group contains six people?

03:38:45 3 A. Yes.

03:38:47 4 Q. And based on the feedback from the focus group, you

03:38:50 5 actually modified in some instances the description of the

03:38:56 6 price to specify that the price didn't include trade-in

03:38:59 7 value?

03:38:59 8 A. I did, yes.

03:39:00 9 Q. And the reason you made that change was because one

03:39:04 10 focus group participant indicated some -- some type of

03:39:07 11 uncertainty about whether the price included trade-in

03:39:11 12 value?

03:39:11 13 A. Yes, that is true.

03:39:13 14 Q. And you recognize that whether the survey assumed

03:39:17 15 trade-in prices, it could actually impact how the survey

03:39:21 16 respondents interpreted price, correct?

03:39:23 17 A. Yes, that is possible.

03:39:27 18 Q. And if there is an impact on how the respondents

03:39:31 19 interpreted price, then it could impact your calculation of

03:39:34 20 will -- willingness to pay?

03:39:37 21 A. Yes, there are scenarios where that's true.

03:39:42 22 Q. You take notes when you conduct these focus groups, do

03:39:45 23 you not?

03:39:46 24 A. I do.

03:39:46 25 Q. Doctor, if you would turn in your binder --

03:39:53 1 MS. SMITH: And, Mr. Lee, if you could pull up  
03:39:56 2 Plaintiffs' Exhibit 2822.

03:39:59 3 Q. (By Ms. Smith) I think we're going to see some notes  
03:40:01 4 from your focus group. Do those look familiar, Doctor?

03:40:06 5 A. They do, indeed.

03:40:06 6 MS. SMITH: All right. I need my glasses for  
03:40:06 7 this.

03:40:07 8 A. Sorry, which tab am I on?

03:40:10 9 Q. (By Ms. Smith) Tab 2, Doctor.

03:40:12 10 And I am -- are you there?

03:40:20 11 A. Yes.

03:40:20 12 Q. Okay. Great. And I also have it on your screen for --  
03:40:24 13 for your convenience?

03:40:25 14 Now, I'm going to call your attention, Doctor, to  
03:40:28 15 the second paragraph that talks about -- you asked the  
03:40:30 16 focus group whether any features stood out and why. Do you  
03:40:33 17 see that?

03:40:33 18 A. Yes, I do.

03:40:34 19 Q. Okay. And we see Kathie here, and it looks like price  
03:40:37 20 stood out to Kathie, because there were several  
03:40:40 21 combinations with really good features and a low price,  
03:40:44 22 correct?

03:40:44 23 A. Yes, in her version of the survey, that was her  
03:40:47 24 opinion, yes.

03:40:50 25 MS. SMITH: Your Honor, I'll move to strike the

03:40:55 1 last part of that response.

03:41:11 2 THE COURT: I'll overrule that. I mean,  
03:41:13 3 everything in here is her opinion. It's an opinion survey.  
03:41:16 4 I don't think that's non-responsive.

03:41:17 5 MS. SMITH: Thank you, Your Honor.

03:41:19 6 Q. (By Ms. Smith) All right. Let's look -- I'm going to  
03:41:21 7 direct your attention to a respondent -- I believe she says  
03:41:25 8 her name is Mekia?

03:41:27 9 A. Yes, that's correct.

03:41:29 10 Q. Okay.

03:41:35 11 MS. SMITH: I am looking -- let me see -- I am  
03:41:38 12 looking, actually at the second page, Mr. Lee, at the top.  
03:41:42 13 There we go, thank you.

03:41:44 14 Q. (By Ms. Smith) It says: Mekia thought there were a  
03:41:47 15 few strange storage and price combinations; for instance,  
03:41:51 16 too much storage for too low of a price.

03:41:54 17 Do you see that, Doctor?

03:41:55 18 A. Yes, I do.

03:41:56 19 Q. Okay. So what we learned from these notes is that at  
03:41:58 20 least two members of your six-person focus group expressed  
03:42:04 21 that they -- they had some selections where they were  
03:42:06 22 surprised by the price and feature combinations, correct?

03:42:09 23 A. Yes, that there were -- yeah, a few selections, that's  
03:42:15 24 true.

03:42:15 25 Q. They -- but you didn't make any changes to your survey

03:42:18 1 based on that feedback, did you?

03:42:19 2 A. No, I didn't think they were warranted.

03:42:22 3 Q. Okay. And you didn't make changes, even though you

03:42:25 4 agree that if there was an impact on how the respondents

03:42:31 5 interpreted price, then it could impact your calculation of

03:42:34 6 willingness to pay, correct?

03:42:35 7 A. This doesn't indicate -- what you're stating is

03:42:42 8 correct, but I don't think you can draw that conclusion

03:42:44 9 from these statements.

03:42:46 10 Q. Now, let's look a little further in your notes. I

03:43:03 11 think we see --

03:43:05 12 MS. SMITH: Mr. Lee, if we go down to LTE speed on

03:43:09 13 Point 3.

03:43:11 14 Q. (By Ms. Smith) We see here some additional feedback.

03:43:13 15 It says most of the focus group didn't know exactly what

03:43:16 16 speed their phones operated at?

03:43:18 17 Do you see that, Doctor?

03:43:19 18 A. I do.

03:43:20 19 Q. Does that meet with your recollection of these notes?

03:43:22 20 A. It does.

03:43:24 21 Q. Yet you actually decided to include average LTE upload

03:43:27 22 and download speed in your survey, didn't you?

03:43:29 23 A. Yes, I definitely did.

03:43:31 24 Q. Now, in a survey, if you tip your hand as to the

03:43:37 25 feature that you care about, that can -- that can create a

03:43:43 1 bias in responses, can't it?

03:43:45 2 A. Yes.

03:43:45 3 Q. And to create your survey, you first examined how

03:43:50 4 smartphone manufacturers like Apple and Samsung describe

03:43:54 5 and promote their cellular speeds. I believe I heard that

03:43:57 6 testimony; is that correct?

03:43:58 7 A. I did, yes.

03:43:59 8 Q. And you looked at some literature, which you shared

03:44:03 9 some of it with the jurors, to see how those companies

03:44:07 10 describe the features; is that correct?

03:44:09 11 A. Yes.

03:44:10 12 Q. Okay.

03:44:12 13 MS. SMITH: Mr. Lee, if we can see Plaintiffs'

03:44:15 14 190.

03:44:16 15 Q. (By Ms. Smith) And that's Tab 3, Doctor.

03:44:24 16 Now, you may recognize this, this is an Apple

03:44:27 17 press release for the iPhone 5. Do you recognize that,

03:44:30 18 Doctor?

03:44:30 19 A. I do.

03:44:31 20 Q. And this is the press release that references

03:44:35 21 ultra-fast wireless standards, correct?

03:44:37 22 A. Yes.

03:44:39 23 Q. Okay.

03:44:40 24 MS. SMITH: If we could go down to that fifth

03:44:43 25 paragraph. Let's see -- there you go, Mr. Lee.

03:45:02 1 Q. (By Ms. Smith) We see some discussion about supporting  
03:45:04 2 LTE technology; do you see that?

03:45:05 3 A. I do.

03:45:08 4 Q. And do you see any mention in there of any specific  
03:45:15 5 average upload or download speeds?

03:45:18 6 A. No, these are generic marketing terms.

03:45:21 7 Q. Okay.

03:45:23 8 MS. SMITH: Now, Mr. Lee, if we can go to the  
03:45:25 9 bottom of that page, let's see. I'm sorry, back -- back up  
03:45:29 10 to LTE. I apologize. At the bottom of that paragraph.  
03:45:40 11 There we go.

03:45:42 12 Q. (By Ms. Smith) We see some language that says:  
03:45:48 13 Network speeds are dependent on carrier network. Do you  
03:45:51 14 see that?

03:45:52 15 A. Sorry, I'm having trouble finding it here.

03:45:57 16 Q. I apologize. Let's see if Mr. Lee can get you to the  
03:46:01 17 right place.

03:46:07 18 MS. SMITH: There's some -- Mr. Lee, there at the  
03:46:10 19 third of fourth pages, about middle of the page, it says:  
03:46:14 20 LTE is available through select carriers. There we go.

03:46:18 21 Thank you, Mr. Lee.

03:46:19 22 Q. (By Ms. Smith) See that, Doctor? That says: Network  
03:46:22 23 speeds are dependent on carrier networks. Check with your  
03:46:27 24 carrier for details?

03:46:28 25 A. I do.

03:46:29 1 Q. Did you see that when you were preparing your survey?

03:46:31 2 A. I did.

03:46:31 3 Q. But you didn't include any notes such as that set forth

03:46:36 4 in the press release from your survey, did you?

03:46:37 5 A. I did not. I didn't think it would be appropriate.

03:46:42 6 Q. Now --

03:46:43 7 MS. SMITH: You can take that down, Mr. Lee.

03:46:46 8 Q. (By Ms. Smith) You've never had any responsibility for

03:46:48 9 setting product prices, including for cell phones, have

03:46:52 10 you?

03:46:52 11 A. No.

03:46:52 12 Q. And you'd agree with me that there's a difference

03:46:56 13 between willingness to pay more and actually paying more,

03:46:59 14 wouldn't you?

03:46:59 15 A. Yes.

03:47:01 16 Q. And you're not aware of Apple specifically considering

03:47:05 17 LTE upload or download speed and setting the prices for

03:47:09 18 its -- for its products, correct?

03:47:11 19 A. It is consistent with its pricing patterns, but I

03:47:15 20 haven't seen specific evidence.

03:47:17 21 Q. So you're not aware of Apple specifically considering

03:47:22 22 it, are you?

03:47:23 23 A. No, I haven't heard from Apple representatives specific

03:47:26 24 to that.

03:47:26 25 Q. And you haven't seen any documents or testimony

03:47:29 1 indicating that Apple considers LTE upload or download  
03:47:35 2 speed in setting prices for its products, have you?

03:47:37 3 A. Again, it's consistent with its documents, but I  
03:47:40 4 haven't seen something specific to LTE speeds.

03:47:42 5 Q. And you haven't conducted a survey of actual iPhone  
03:47:49 6 purchasers and asked them whether they purchased their  
03:47:53 7 phone because it had a faster speed, correct?

03:47:55 8 A. I don't think I would agree with that.

03:47:58 9 Q. That you've conducted a survey of actual iPhone  
03:48:03 10 purchasers and asked them whether they purchased their  
03:48:06 11 phone because of speed?

03:48:07 12 A. Oh, sorry, I haven't conducted one. I've just seen  
03:48:11 13 them.

03:48:11 14 Q. Thank you.

03:48:11 15 And you haven't asked anyone whether they actually  
03:48:14 16 paid more for their iPhone because it had faster LTE speed,  
03:48:19 17 have you?

03:48:19 18 A. No.

03:48:19 19 Q. According to you, there was not sufficient evidence for  
03:48:25 20 you to determine whether a change to LTE upload or download  
03:48:30 21 speed impacts Apple's pricing, correct?

03:48:33 22 A. Based solely on Apple's iPhone data, yes.

03:48:38 23 Q. But you nonetheless attempted to determine willingness  
03:48:44 24 to pay associated with the patents-in-suit, correct?

03:48:45 25 A. Yes.

03:48:46 1 Q. And you understand in this case, Plaintiffs have  
03:48:54 2 accused only LTE-enabled devices of infringement, correct?  
03:48:58 3 A. Yes.  
03:48:58 4 Q. And you calculate -- you calculate a change in profit  
03:49:02 5 only for LTE-enabled devices?  
03:49:06 6 A. Yes.  
03:49:06 7 Q. And you understand that the first LTE-enabled iPhone  
03:49:11 8 was the iPhone 5?  
03:49:12 9 A. I do.  
03:49:12 10 Q. And it was launched, I believe, some -- some time back  
03:49:18 11 in September of 2012, correct?  
03:49:20 12 A. Yes.  
03:49:20 13 Q. And the iPhones prior to the iPhone 5, they didn't have  
03:49:26 14 LTE, correct?  
03:49:26 15 A. Yes.  
03:49:26 16 Q. So the iPhones before the iPhone 5, undisputedly, don't  
03:49:32 17 use the patents-in-suit, correct?  
03:49:33 18 A. That is my understanding.  
03:49:36 19 MS. SMITH: Mr. Lee, if we could see Plaintiffs'  
03:49:38 20 Exhibit 51 again.  
03:49:44 21 Q. (By Ms. Smith) Okay. Now, this is a price list for  
03:50:00 22 iPhone models from the iPhone -- from the iPhone to the  
03:50:06 23 iPhone 6, correct?  
03:50:08 24 A. Well, so far this page goes through the iPhone 4S.  
03:50:14 25 Q. I apologize?

03:50:15 1 MS. SMITH: Mr. Lee, can you show the witness the  
03:50:17 2 remainder?

03:50:18 3 Q. (By Ms. Smith) All right. The iPhone 4 is on this  
03:50:20 4 list?

03:50:21 5 MS. SMITH: I'm going to have Mr. Lee highlight  
03:50:23 6 the iPhone 4S.

03:50:26 7 Q. (By Ms. Smith) That was the last model to launch  
03:50:28 8 before the 5, correct?

03:50:29 9 A. The 4S, yes.

03:50:32 10 Q. And each model of the 4S was without LTE, correct?

03:50:36 11 A. That is my understanding.

03:50:49 12 Q. And then we see the launch of the iPhone 5C; do you see  
03:50:53 13 that?

03:50:53 14 A. The 5C, yes.

03:50:54 15 Q. And each -- and that one has LTE, correct?

03:50:59 16 A. I believe so, yes.

03:51:00 17 Q. And each of the 5C products was offered at the same  
03:51:04 18 price or lower than the non-LTE 4S, correct?

03:51:11 19 A. Let me compare. I mean, so you're comparing apples and  
03:51:22 20 oranges across time, right? Could you repeat your  
03:51:24 21 question, I'm sorry.

03:51:25 22 Q. At the time of the iPhone 4 launch and the time of the  
03:51:29 23 iPhone 5C launch, they were priced the same, were they not?

03:51:33 24 A. Yes, that is correct.

03:51:41 25 Q. Okay.

03:51:41 1 A. Those were different times, though. But, yes, at the  
03:51:45 2 time of launch, two years apart.

03:51:46 3 Q. Now, you were here for Mr. Mueller's opening, were you  
03:52:07 4 not?

03:52:08 5 A. I was.

03:52:08 6 Q. And you saw Mr. Mueller buy -- you saw that he  
03:52:12 7 purchased a phone at Walmart for \$30.00 that had LTE, did  
03:52:15 8 you not?

03:52:16 9 A. I recall something to that effect.

03:52:18 10 Q. Here, let me -- does this jog your memory?

03:52:21 11 A. Yes.

03:52:22 12 Q. All right. And you don't dispute that it's possible to  
03:52:24 13 buy a phone with LTE for \$30.00, do you?

03:52:27 14 A. No.

03:52:28 15 Q. Okay. And this phone here can connect to the LTE  
03:52:32 16 network?

03:52:35 17 A. I assume that is correct.

03:52:36 18 Q. You have no reason to dispute that if it says it on the  
03:52:39 19 box?

03:52:39 20 A. No, I do not.

03:52:40 21 Q. Okay. Can make calls using the LTE network?

03:52:43 22 A. I assume so, yes.

03:52:45 23 Q. It can probably send data using the LTE network?

03:52:48 24 A. Yes.

03:52:48 25 Q. Okay. Now, in your analysis, you calculated the change

03:52:52 1 in retail willingness to pay for each patent; is that  
03:52:55 2 correct?  
03:52:55 3 A. Yes.  
03:53:00 4 Q. That last slide we saw Ms. Truelove put -- put up. How  
03:53:04 5 much -- when you add all of each patent up, what does that  
03:53:08 6 number come to?  
03:53:09 7 A. Sorry, you want retail willingness to pay and not  
03:53:13 8 profits.  
03:53:13 9 Q. Profits, excuse me. Yes. Excuse me?  
03:53:15 10 A. Okay. Let's see, I believe it was \$8.79.  
03:53:20 11 Q. Okay. And that would be \$8.79 on -- and this whole  
03:53:29 12 phone costs \$30.00; is that correct?  
03:53:36 13 A. The math that you're doing is correct.  
03:53:39 14 Q. Thank you?  
03:53:40 15 MS. SMITH: I'll pass the witness.  
03:53:41 16 THE COURT: Redirect, Ms. Truelove.  
03:53:42 17 MS. TRUELOVE: Yes, Your Honor.  
03:53:44 18 THE COURT: Please proceed.  
03:53:45 19 MS. TRUELOVE: Thank you.  
03:53:45 20 REDIRECT EXAMINATION  
03:53:46 21 BY MS. TRUELOVE:  
03:53:46 22 Q. Doctor, what -- what did Apple's survey expert say  
03:53:55 23 about whether using a comparable license approach was  
03:53:58 24 better than using a CBC survey?  
03:54:00 25 A. They didn't have a survey expert.

03:54:03 1 Q. Well, what is your opinion about whether using  
03:54:06 2 comparable licenses is better or worse than using a CBC  
03:54:10 3 survey approach?  
03:54:11 4 A. I think it's an entirely different approach, and it  
03:54:15 5 will depend. But I do think a CBC survey approach is very  
03:54:20 6 reliable.  
03:54:21 7 Q. Do you know whether PanOptis has somebody that is going  
03:54:26 8 to come up and talk to the jury about comparable license  
03:54:30 9 approach?  
03:54:30 10 A. PanOptis? Not that I'm aware of.  
03:54:33 11 Q. Is someone going to speak to them about licenses?  
03:54:36 12 A. Oh, well, Mr. Kennedy will review licenses.  
03:54:39 13 Q. Okay. And -- and what is his role in this case?  
03:54:42 14 A. He's the damages expert.  
03:54:43 15 Q. All right. And what did he ask you to do?  
03:54:45 16 A. He asked me to design and create a survey to measure  
03:54:50 17 people's willingness to pay for LTE upload and download  
03:54:54 18 speeds and Apple's profits associated therewith.  
03:54:57 19 Q. Ms. Smith talked to you a lot about what she was  
03:55:02 20 calling hypothetical phones in the marketplace and phones  
03:55:05 21 taking on features that weren't currently -- or levels to  
03:55:09 22 features that weren't currently in the marketplace. Do you  
03:55:12 23 recall that?  
03:55:12 24 A. I do.  
03:55:12 25 Q. What did Apple's survey expert have to say regarding

03:55:16 1 you taking those levels for your features in your survey?

03:55:18 2 A. They didn't have a survey expert.

03:55:22 3 Q. Why did you allow an iPhone to have the price of

03:55:26 4 \$199.00?

03:55:27 5 A. Because I wanted to reasonably reflect the range of

03:55:31 6 prices not just for Apple's phones but for competing phones

03:55:35 7 in the market. Phones like Motorola and LG do take those

03:55:42 8 values.

03:55:43 9 Q. Ms. Smith also talked to you about storage and the

03:55:52 10 levels that you applied to storage, and you included a

03:55:55 11 level up to 256 gigabytes. Do you recall that?

03:55:59 12 A. I do.

03:55:59 13 Q. What did Apple's survey expert have to say about

03:56:03 14 whether or not that was an appropriate level to include for

03:56:08 15 your storage feature?

03:56:08 16 A. Still nothing. They didn't have a survey expert.

03:56:10 17 Q. Okay. Is -- is including a level that you might not

03:56:12 18 find on the marketplace, how is that going to affect your

03:56:15 19 survey results, if at all?

03:56:17 20 A. Well -- so you oftentimes do need to include levels

03:56:22 21 that you don't find on the marketplace to help you tease

03:56:24 22 out the value of different features. And the 256

03:56:27 23 megabytes, you do find on the marketplace. I -- I think

03:56:29 24 you can buy an Apple phone right now that has 256

03:56:33 25 gigabytes.

03:56:34 1 Q. We talked a little bit -- Ms. Smith did, talked with  
03:56:38 2 you about your focus group. Do you recall that?  
03:56:40 3 A. Yes.  
03:56:40 4 Q. And she went through several comments that the focus  
03:56:45 5 group made. Do you recall that?  
03:56:46 6 A. I do.  
03:56:46 7 Q. And whose notes were those?  
03:56:48 8 A. They were mine.  
03:56:49 9 Q. And why were you taking those notes?  
03:56:51 10 A. To keep an accurate record of what I experienced so I  
03:56:56 11 could decide whether or not the survey needed modification.  
03:56:59 12 Q. So it sounds like the focus group worked?  
03:57:03 13 A. Yes.  
03:57:04 14 Q. And did Apple's survey expert have any criticism of  
03:57:07 15 your methods and the way you went about conducting and  
03:57:11 16 designing your survey, including with the focus group?  
03:57:14 17 A. They did not offer a survey expert.  
03:57:23 18 Q. I think one of the comments, if I recall, in the notes  
03:57:27 19 that Mekia, I think it was, said she didn't know what speed  
03:57:30 20 her phone was operating at at any given time, and I'm  
03:57:34 21 paraphrasing. Do you recall that?  
03:57:35 22 A. Yes.  
03:57:35 23 Q. And how does that affect your survey results, if at  
03:57:42 24 all?  
03:57:42 25 A. It doesn't. So in the real world, people aren't always

03:57:46 1 going to know what their phone is doing or the exact  
03:57:49 2 characteristics, but they still buy phones anyway. That  
03:57:52 3 actually better creates -- mimics the real world.

03:57:57 4 Q. And -- and, again, was there any criticism from a  
03:58:01 5 survey expert in this case about that particular aspect of  
03:58:04 6 your survey?

03:58:05 7 A. No.

03:58:05 8 Q. And -- and I think you testified that you had reviewed  
03:58:11 9 a conjoint-based survey by Professor Hauser; is that right?

03:58:16 10 A. That is true.

03:58:17 11 Q. And who is he again?

03:58:18 12 A. He is a professor at MIT who has conducted CBC surveys  
03:58:24 13 for Apple to measure the demand -- consumer demand for  
03:58:28 14 patented features.

03:58:28 15 Q. And how many -- how many surveys did he do; do you  
03:58:32 16 know?

03:58:32 17 A. At least two that I know.

03:58:33 18 Q. And -- and, again, we don't have a survey expert in  
03:58:36 19 this case that performed the same type of analysis that you  
03:58:38 20 did to get any comparison, do we?

03:58:40 21 A. No.

03:58:42 22 MS. TRUELOVE: Pass the witness.

03:58:44 23 THE COURT: Further cross-examination.

03:58:44 24 RECROSS-EXAMINATION

03:58:45 25 BY MS. SMITH:

03:58:45 1 Q. Doctor, did -- did your counsel fail to inform you that  
03:58:54 2 Dr. Ray Perryman will be testifying in this case in a few  
03:58:57 3 days?

03:58:58 4 A. I am aware of that.

03:58:59 5 Q. Thank you?

03:59:00 6 THE COURT: Do you pass the witness, Ms. Smith?

03:59:02 7 MS. SMITH: I do, Your Honor.

03:59:03 8 THE COURT: Additional direct, Ms. Truelove?

03:59:05 9 MS. TRUELOVE: Yes, Your Honor.

03:59:05 10 REDIRECT EXAMINATION

03:59:08 11 BY MS. TRUELOVE:

03:59:08 12 Q. Dr. Reed-Arthurs, are you familiar with Mr. Perryman?

03:59:11 13 A. I am.

03:59:12 14 Q. You've been doing economist work and this survey work  
03:59:15 15 for how long?

03:59:16 16 A. Over 10 years now.

03:59:17 17 Q. Have you ever seen a published survey by Dr. Perryman  
03:59:21 18 in your field?

03:59:22 19 A. I don't believe so, no.

03:59:24 20 Q. All right?

03:59:25 21 MS. TRUELOVE: Thank you, Your Honor. Pass the  
03:59:27 22 witness.

03:59:27 23 THE COURT: Anything further for cross, Ms. Smith?

03:59:29 24 MS. SMITH: No, Your Honor.

03:59:30 25 THE COURT: All right. Dr. Reed-Arthurs, you may

03:59:33 1 step down.

03:59:34 2 THE WITNESS: Thank you, Your Honor.

03:59:35 3 THE COURT: You're welcome.

03:59:36 4 MS. TRUELOVE: Your Honor, could we ask that

03:59:38 5 Dr. Reed-Arthurs be excused?

03:59:39 6 THE COURT: Any objection?

03:59:40 7 MS. SMITH: No objection.

03:59:41 8 THE COURT: The witness is excused.

03:59:43 9 Plaintiffs, who is your next witness?

03:59:46 10 MR. SHEASBY: Your Honor, Plaintiffs will call

03:59:51 11 Mr. Kennedy. But before we do that, I believe we should

03:59:54 12 seal the courtroom because there is going to be some

03:59:57 13 confidential information shown in Mr. Kennedy's testimony,

04:00:00 14 and it may be less disruptive if we seal it now. It's

04:00:06 15 Apple's confidential information, but I want to respect

04:00:11 16 that.

04:00:11 17 THE COURT: All right. Who's going to -- who's

04:00:12 18 going to direct the witness?

04:00:13 19 MS. BAXTER: I am, Your Honor.

04:00:13 20 THE COURT: What's your best estimate of time,

04:00:13 21 Mr. Baxter?

04:00:13 22 MR. BAXTER: Take about an hour, Your Honor.

04:00:17 23 THE COURT: All right. Well, I won't promise you

04:00:21 24 we won't break for some recess in the middle of it, but

04:00:24 25 we'll get started.

04:00:24 1 MR. BAXTER: That would probably be very helpful  
04:00:26 2 for me, Your Honor.

04:00:27 3 THE COURT: Well, we'll do it when we need to.

04:00:29 4 MR. BAXTER: Thank you.

04:00:32 5 THE COURT: If Mr. Kennedy will come forward and  
04:00:34 6 be sworn.

04:00:58 7 (Witness sworn.)

04:00:59 8 THE COURT: Please, sir, come around, have a seat  
04:01:01 9 here at the witness stand.

04:01:06 10 And based on counsel's request at this time and  
04:01:14 11 before this testimony begins, I'll order the courtroom  
04:01:16 12 sealed and direct that anyone present not subject to the  
04:01:19 13 protective order or aligned with Defendant, Apple, since  
04:01:24 14 it's their information that's at issue, those persons  
04:01:26 15 should excuse themselves and remain outside the courtroom  
04:01:29 16 until the courtroom is unsealed and reopened.

04:01:32 17 (Courtroom sealed.)

04:01:32 18 (This portion of the transcript is sealed  
04:01:32 19 and filed under separate cover as

04:33:54 20 Sealed Portion No. 7.)

04:33:54 21 (Courtroom unsealed.)

04:33:55 22 THE COURT: And the jury is excused to the jury  
04:33:56 23 room for recess.

04:34:00 24 COURT SECURITY OFFICER: All rise.

04:34:02 25 THE COURT: You lead the way, Ms. Scott.

04:34:09 1 JUROR: Yes, sir.

04:34:12 2 THE COURT: Thank you.

04:34:21 3 (Jury out.)

04:34:22 4 THE COURT: The Court stands in recess.

04:48:08 5 (Recess.)

04:48:20 6 (Jury out.)

04:48:20 7 COURT SECURITY OFFICER: All rise.

04:48:24 8 THE COURT: Be seated, please.

04:48:28 9 Are you ready to continue, Mr. Baxter?

04:48:31 10 MR. BAXTER: Yes, Your Honor.

04:48:31 11 MR. MUELLER: I apologize, Your Honor. Before you

04:48:33 12 call the jury back, the objection that I made, just to

04:48:35 13 explain, if I could, there was a reference to negotiations

04:48:35 14 between the parties of being unable to strike a deal in the

04:48:43 15 real world, which is being contrasted with the hypothetical

04:48:46 16 negotiation.

04:48:46 17 I objected because that was getting into -- if not

04:48:50 18 into, very, very close to the NDA protected material

04:48:54 19 pursuant to Your Honor's rulings. That's why I objected.

04:48:57 20 I would ask that there be no more questions that get close

04:49:01 21 to this line.

04:49:02 22 THE COURT: I heard the statement of the witness

04:49:05 23 being conditioned on what he had heard in court, and based

04:49:08 24 on that, I don't believe it crossed that line.

04:49:10 25 MR. MUELLER: Understood.

04:49:10 1 THE COURT: But I understand the basis of your  
04:49:13 2 objection.

04:49:14 3 MR. MUELLER: Thank you.

04:49:14 4 And the last thing I'll just mention briefly, in  
04:49:17 5 case Mr. Blevins is called today, Panasonic, LG, and  
04:49:21 6 Samsung have now been mentioned with the last three  
04:49:24 7 witnesses. This first deposition clip. Ms. Dwyer's  
04:49:25 8 testimony, she talked about those three companies being  
04:49:28 9 delegates to the LTE standards creation. And now we've  
04:49:30 10 heard those are the three companies at the hypothetical  
04:49:35 11 negotiating table.

04:49:36 12 I think at this point, Your Honor, two days into  
04:49:40 13 the testimony, it's very, very clear that the door has been  
04:49:42 14 opened for Mr. Blevins to say if Apple had been approached  
04:49:47 15 by any of those three companies.

04:49:49 16 THE COURT: Well, we're not -- I mean, I don't  
04:49:51 17 think we're going to get to that today. I don't know how  
04:49:55 18 long your cross-examination of this witness is going to go,  
04:49:57 19 but it's almost 5:00 o'clock now. Who follows Mr. Kennedy?

04:50:05 20 MR. SHEASBY: We rest, Your Honor.

04:50:07 21 THE COURT: Okay. And then your first witness  
04:50:09 22 will be --

04:50:12 23 MR. MUELLER: Mr. Blevins.

04:50:13 24 THE COURT: Okay. I don't want to keep the -- the  
04:50:15 25 jury out and go into an argument about this right now.

04:50:20 1 I'll carry it, and if -- before Mr. Blevins takes the  
04:50:23 2 stand, you'll -- I'll give you an opportunity to bring it  
04:50:25 3 back up, and we'll cross that bridge then.

04:50:28 4 MR. MUELLER: Thank you, Your Honor.

04:50:29 5 THE COURT: Also, counsel, before the jury comes  
04:50:32 6 in and so I won't forget, I've looked at what you've  
04:50:35 7 previously submitted as a jointly proposed final jury  
04:50:39 8 instruction and verdict form. And in light of how the case  
04:50:43 9 has progressed, I don't find it to be particularly helpful.

04:50:46 10 So I'm going to order that you jointly meet and  
04:50:49 11 confer and resubmit an updated proposed final jury  
04:50:53 12 instruction and verdict form by 5:00 o'clock tomorrow.

04:50:56 13 MR. MUELLER: Understood. Thank you, Your Honor.

04:50:57 14 THE COURT: All right. Let's bring in the jury.

04:51:00 15 COURT SECURITY OFFICER: All rise.

04:51:16 16 (Jury in.)

04:51:17 17 THE COURT: Please be seated.

04:51:32 18 All right. We'll continue with the direct  
04:51:38 19 examination of Mr. Kennedy by counsel for the Plaintiff.

04:51:41 20 You may proceed, Mr. Baxter.

04:51:44 21 Q. (By Mr. Baxter) Mr. Kennedy, were you here when there  
04:51:48 22 was a little kerfuffle about whether or not the major  
04:51:53 23 players in the market had taken licenses or not?

04:51:56 24 A. Yes.

04:51:56 25 Q. I want you to look at what we've got on the screen here

04:52:00 1 as Exhibit No. 10 and explain --

04:52:01 2 THE COURT: Let me interrupt you, Mr. Baxter.

04:52:03 3 MR. BAXTER: Sir?

04:52:04 4 THE COURT: Let me interrupt you.

04:52:04 5 MR. BAXTER: Yes, Your Honor.

04:52:04 6 THE COURT: Before the recess, I unsealed the

04:52:07 7 courtroom. Is there a need to reseal the courtroom,

04:52:10 8 counsel?

04:52:11 9 MR. BAXTER: I'm afraid there is probably,

04:52:12 10 Your Honor.

04:52:12 11 THE COURT: All right. Then, based on that

04:52:15 12 representation, I'll order the courtroom sealed and I'll

04:52:19 13 direct all those present not subject to the protective

04:52:23 14 order or aligned with Defendant Apple to excuse themselves

04:52:26 15 until I order the courtroom unsealed and reopened.

04:52:30 16 (Courtroom sealed.)

04:52:30 17 (This portion of the transcript is sealed

04:52:30 18 and filed under separate cover as

04:52:31 19 Sealed Portion No. 8.)

06:07:28 20 (Courtroom unsealed.)

06:07:29 21 THE COURT: And with that, ladies and gentlemen,

06:07:31 22 you're excused until tomorrow morning.

06:07:33 23 COURT SECURITY OFFICER: All rise.

06:07:34 24 THE COURT: If you'd lead the way, please,

06:07:37 25 Ms. Scott.

06:07:38 1 JUROR: Thank you. Yes, sir.

06:07:40 2 THE COURT: You've done a good job so far.

06:07:42 3 (Jury out.)

06:07:42 4 THE COURT: Mr. Kennedy, you can step down for

06:07:55 5 right now.

06:07:56 6 THE WITNESS: Thank you, Your Honor.

06:07:56 7 THE COURT: Please be seated.

06:07:57 8 Counsel, let me remind you that, as we did this

06:08:04 9 morning, I intend to call out a representative for both

06:08:07 10 sides to read into the record tomorrow morning those items

06:08:11 11 from the list of pre-admitted exhibits that have been used

06:08:13 12 during today's portion of the trial.

06:08:16 13 I expect you to meet and confer about that

06:08:19 14 overnight. I really don't expect there to be any

06:08:21 15 disagreements, and I've given you clear guidance about how

06:08:24 16 to do that. But I will do that before I bring in the jury

06:08:32 17 in the morning.

06:08:33 18 Also, with regard to any disputes that may develop

06:08:38 19 overnight, this evening -- I have yet to get a rendition

06:08:43 20 from the parties that gives me the disputed demonstrative

06:08:46 21 and just the disputed demonstrative with a clear and

06:08:51 22 succinct statement of what the parties' competing positions

06:08:54 23 are, and I don't think that's too much to ask.

06:08:56 24 When I come in the morning and I've got a binder

06:09:02 25 with six thick inches of paper from you all overnight, it

06:09:07 1 really is of no use to me. There's no way I can get  
06:09:10 2 through that before we have to bring the jury in and start  
06:09:14 3 the trial.

06:09:15 4 So try to give me what I've been asking for. And  
06:09:17 5 I don't know if these binders are being prepared in Boston  
06:09:22 6 and Los Angeles and emailed overnight or where they're  
06:09:22 7 coming from, but they're not helpful the way I've been  
06:09:22 8 getting them.

06:09:23 9 And I've said this to you in chambers. I'm going  
06:09:27 10 to say it to you again on the record in hopes that will  
06:09:29 11 make a difference. Give me any disputed demonstratives.  
06:09:32 12 Don't give me demonstratives that aren't in dispute. And  
06:09:35 13 give me a succinct single paragraph outlining each party's  
06:09:39 14 position about each disputed demonstrative.

06:09:43 15 And I'll look for an update from you in writing by  
06:09:48 16 7:00 a.m. in hopes that some of those have been resolved  
06:09:54 17 overnight.

06:09:54 18 And, as I said, we will read into the record the  
06:09:58 19 exhibits from today's portion of the trial before I bring  
06:10:00 20 in the jury.

06:10:00 21 Are there any questions from either side before we  
06:10:03 22 recess for this evening?

06:10:05 23 MR. SHEASBY: Your Honor, I just have one, which  
06:10:08 24 is -- which is -- it's a point of agreement. I can read in  
06:10:10 25 the time splits for Mewes and Stewart because I know that's

06:10:15 1 something that's been outstanding.

06:10:17 2 THE COURT: I'll take that -- or I'll direct you  
06:10:20 3 to give that to my staff after we recess, Mr. Sheasby.

06:10:22 4 MR. SHEASBY: Thank you, Your Honor.

06:10:23 5 THE COURT: I will tell you that we got in 7 hours  
06:10:25 6 and 7 minutes today.

06:10:27 7 And I will refer you to my law clerks as to an  
06:10:33 8 exact split between the parties once we factor in those  
06:10:38 9 deposition designation splits.

06:10:39 10 Are there other questions from Plaintiff before we  
06:10:41 11 recess for the evening?

06:10:43 12 MR. BAXTER: No, Your Honor, not from the  
06:10:45 13 Plaintiff.

06:10:45 14 THE COURT: Anything from the Defendant?

06:10:47 15 MR. MUELLER: No, Your Honor.

06:10:47 16 THE COURT: All right. And I assume after we  
06:10:49 17 finish with Mr. Kennedy, then you will lead with  
06:10:53 18 Mr. Blevins; is that right, Mr. Mueller?

06:10:54 19 MR. MUELLER: That's correct, Your Honor.

06:10:55 20 THE COURT: All right. Raise with me in the  
06:10:57 21 morning your question about whether the door has been  
06:11:00 22 opened or not, and I'll consider it overnight.

06:11:02 23 MR. MUELLER: Thank you, Your Honor.

06:11:02 24 THE COURT: We stand in recess until tomorrow  
06:11:05 25 morning.

06:11:05 1 COURT SECURITY OFFICER: All rise.  
2 (Recess.)

9 | CERTIFICATION

11 I HEREBY CERTIFY that the foregoing is a true and  
12 correct transcript from the stenographic notes of the  
13 proceedings in the above-entitled matter to the best of my  
14 ability.

17 /S/ Shelly Holmes  
18 SHELLY HOLMES, CSR, TCRR  
OFFICIAL REPORTER  
State of Texas No.: 7804  
19 Expiration Date: 12/31/20

8/5/2020  
Date